

NEW YEAR'S GREETINGS FROM THE DIRECTOR

The year 1974 is now history — and we will all admit it was *quite* a year! More importantly, the year 1975 is now a reality, stretching out ahead of us, providing for us the raw materials from which we can fashion our plans, our hopes, and our dreams, not only for the lives of each of us, but for our Botanic Gardens as well.

At this time I should like to extend both my congratulations and my deep gratitude to all of you in the "Denver Botanic Gardens Family" whose hard work and diligence made possible our most productive year since the Gardens officially came into being with its incorporation in February 1951. It is a pleasure to report to you that we should all feel very proud of our various successes in 1974. I suggest that we consider our inability to reach some of our goals (always the other side of the coin of success) not as a cause for discouragement, but rather as an additional incentive for accomplishment in 1975.

To each of you individually who compose our greater Botanic Gardens Family — Mayor McNichols and the City Council, Manager Ciancio and his staff, members of the Botanic Gardens Board of Trustees, the Gardens Staff, to our wonderful host of volunteers and to our Members and Friends, the Botanic Gardens extends its wishes that 1975 will be a most rewarding year with a full measure of good health, sufficient prosperity, and much joy in accomplishment. With your continued cooperation, and hard work on the part of us all, we are certain to make 1975 still another great year for the Denver Botanic Gardens — a year of dedicated service to the people of Denver and the State of Colorado.

William G. Gambill, Jr.

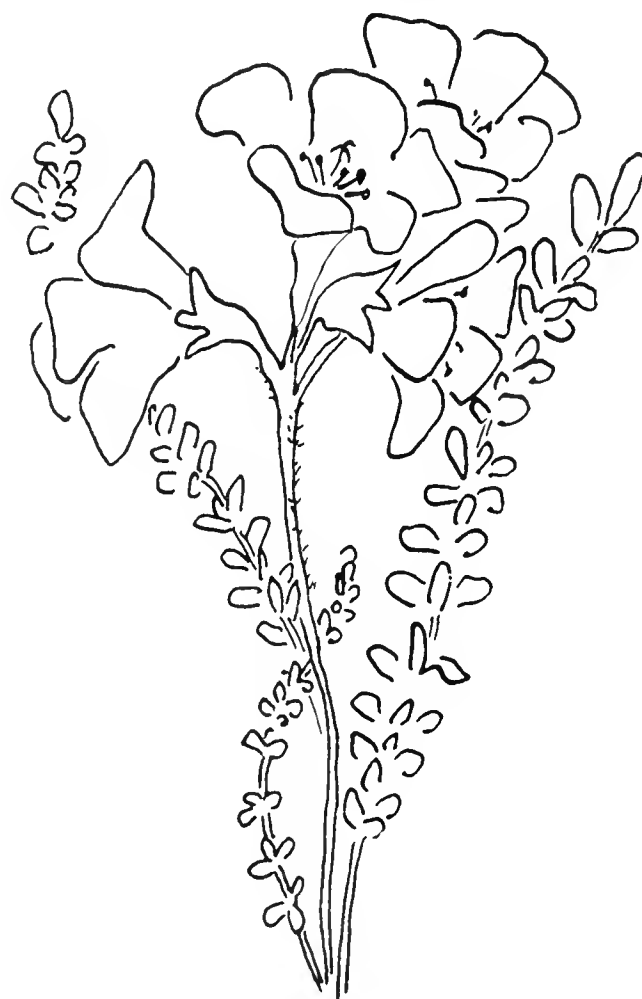
What do your gardeners do in the winter?

Well, for one thing six staff members took four days last month to plow gardens for the Mayor's Senior Citizen Vegetable Garden Project.

Last year a pilot project involved some 500 senior citizens in gardening. Many more expressed a desire to participate in the coming year so we were happy to do our part. Six areas from 13th and High to 32nd and Elm were deep plowed and at one garden, the site of an old dump, truckloads of trash were hauled away also.

The Denver Commission on Aging was in charge of coordinating the project. Three prime objectives listed were: to help participating seniors stretch their food budget; to provide a project that would have social as well as economic benefits; to bring together senior citizens and young people in a meaningful, cooperative venture.

And something to remember as the growing season nears, these gardens could use extra flowering plants to beautify the borders. If anyone has some herbaceous plants to contribute or can help in any other way, please call Nancy Good at 377-8767 or 297-3205.



The Botany Club meeting on January 17 at 7:30 p.m. will provide a rare visual treat for flower lovers. Bill Eisenlohr has spent over 10 years photographing flowers; in his "two screen" presentations he will show over 200 species of Colorado natives. Appropriate background music with a taped narration ties the slide show together. All welcome.

Another scheduled club meeting, that of Around the Seasons, promises to provide a fascinating speaker on a most timely subject. Mo Siegel, the 24 year old president of "Celestial Seasonings" will speak on the "Growing Interest in the Use of Herbs" on January 16 at 11 a.m. (Perhaps some of our readers saw the article on Mr. Siegel and his firm in the *Denver Post* last month.) Four years ago Mo began picking, drying and selling herbs around Boulder. Today with 60 employees the Company has national distribution. Guests welcome.

Something New in the Conservatory

A large flat topped tree aloe, *Aloe bainesii* has recently been purchased from Bruggenthies. It has been planted at the west end of the conservatory near the waterfall (no one will have difficulty finding it for these are the largest of the aloe and can grow up to 60 feet). After a photographer from the *News* came, guides reported that for two weeks children asked to see "the tree who's picture was in the paper."

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Membership at the Denver Botanic Gardens now stands at 2597. Forty-four new members were signed up at the Christmas Sale because of the effort of the Development and Public Relations Committee and the Hostess/Information Desk Volunteers.

Good News!

The following people have completed the fall *Guides Training* class and will soon be leading tours in the Conservatory:

Maggie Apodaca	Victoria E. Kennedy
Lisa Bardwell	Joan Krueger
James Black	Susan Marshall
Lavinia E. Black	Carolyn McLaughlin
Robina Bland	Judy Moore
Jim Borland	Jennis Rhoades
Mildred H. Earhart	Pamela Rodeffer
Mary Eiseman	Mary Rollins
Marcia K. Falk	Pat Steavenson
Judith M. Gerhardt	Juanita Swigart
Shirley Timmons	

Welcome to you all.

A new class will start soon. Why not plan to join? This will begin on January 8 and continue until April 2 from 1 to 3 PM. The cost is \$25.00 to be refunded if a student guides for a total of 40 hours.

Other classes include *Plant Communities* and *Ecosystems* on Tuesdays from January 7 to February 25, 1 to 3 PM in Classroom B. Dr. Denham will discuss the fundamentals of ecology including the bioenergetics of floral ecology and energy conservation and transfer. The cost for this academic class is \$20.00 for members of Denver Botanic Gardens and \$25.00 for non-members.

Also would you please search your collection of *Scientific American* magazines for the September 1970 issue entitled *Biosphere* V. 223, No. 3? Copies are needed for Dr. Denham's class. If you have that issue and would not mind our borrowing it for the month, please call Solange Huggins at 297-2547, Ext. 24.



Home Landscaping is designed to assist home owners in planning and maintaining a desirable outdoor living area. Such subjects as site analysis, design, plant materials, planting, lawn installation and care, pruning and maintenance of the finished product will be covered in illustrated lectures. In this class it might be particularly valuable to have both husband and wife attend so they may jointly plan their property. (Did you realize in all the classes a participating Denver Botanic Gardens member may bring one member of the family for \$3.00 more?)

Larry Watson of Western Evergreen, Inc., noted for its fine collection of native plants and Al Rollinger who wrote *Low Maintenance Gardens* for the Sunset Garden Books will be the instructors. The course is scheduled for January 9 to February 27 from 7:30 to 10 p.m. in classroom C., \$10.00 for members and \$15.00 for non-members.

Those of you who bought dried material at the Christmas Sale (and those who didn't but wish you had) should sign up for *Dried Flower Arrangement*. Avalonne Kosanke who designed such striking decorations for the Christmas tree will teach this from January 22 to February 12, 10 to noon. The cost is \$10.00 for members, \$15.00 for non-members (plus \$1.50 per session for materials). Working with ordinary field, woods, roadside and garden materials, plus some unusual items, Mrs. Kosanke will take each student as rapidly as possible toward modern and advanced designing.

Finally on January 25, at 9 a.m. in Horticulture Hall, the Hi-Hopes Study Club will sponsor their African violet workshop. This is an opportunity to really ask questions about anything that interests you about this most popular of house plants. There will be a fifty cent charge payable at the door. And when you come on the 25th, look at the beautiful display in the library. Our thanks go to Hi-Hopes Study club members who are faithful in sharing their plants with us. Hi-Hopes has a membership of 16 and has been displaying plants here for four years.

People who missed out on the House Plants class may wish to join a course offered by the Community College on this same subject. It will meet every Wednesday evening in February at 1005 York Street. The cost is \$15.00.

For further information please call Sara Collier, 266-1881.

Memorial gifts have been received in memory of Mrs. William Jacobs.

Notes from the Library

A reminder to all that the book drop at the gate house may be used for the return of books when desired.

Because of the great popularity of house plant books, this particular category classified SB 419, will no longer be renewable.

Finally, start saving your books and magazines for the book sale in the Spring. We will pick up donated material if you call Solange Huggins at 297-2547 ext. 24 for an appointment.

* * * *

"Spring Loves Scandinavia" is the title of the free film to be shown on January 11 at 1:30, Classroom C. This will continue our series of lovely colored films of beautiful areas and flowers of the world.



Mr. William Rice, Mrs. Paul Fullerton, Jr., Miss Grace Barger, Dr. William Gambill, Mr. David Blades

Gift to the Greenhouse Collection

A lovely collection of orchids has been given to the Denver Botanic Gardens in honor of Mr. B. Walter Slagle. Mr. Slagle, former President of the American Orchid Society, was a charter member and first president of the Denver Orchid Society. Some of the better specimens include: *Laeliocattleya* Walter Slagle (named in his honor), *Phalaenopsis* Grace Palm, and *Laeliocattleya* Cassiopea.

Members will be sorry to learn of the death of George T. Fukuma. Mr. Fukuma was a very active member of both of the Bonsai clubs. He frequently taught Beginning and Advanced Bonsai classes at the Denver Botanic Gardens. He was a gentle patient teacher and well liked and respected by all his students. We will miss him.

Again this year the Denver Museum of Natural History is offering cruises to the Baja California area. There are two trips scheduled:

1. Islands of the Pacific and San Ignacio Lagoon: March 1-9, 1975. Two days and nights in San Diego are included as well as a six-day cruise sailing from San Diego. We will stop at several unusual desert islands to observe elephant seals, sea lions, and bird life; then visit San Ignacio Lagoon where we will take time to make close-up observations of gray whales.

2. Gulf of California — Midriff Islands: April 19-27, 1975. This trip includes two days and nights in San Diego plus a six-day cruise sailing out of San Felipe, Mexico. We will see nesting boobies, terns, pelicans and gulls as well as intertidal life and magnificent cardon cactus forests on several desert islands. We will observe the pod of fin whales that makes its permanent home in the Gulf. Fishing is excellent so bring your gear.

For further information please contact the Denver Museum of Natural History.

Janus was the Roman God of Beginnings who looked both forward and back so in this month named in his honor, perhaps it would be appropriate to think back on the striking displays of plants used in the Lobby Court area last year. In January many varied plant forms were seen by the visitors as Euphorbias from the greenhouse collection were on display; a pre-spring planting of red tulips, blue cinerarias and many colored primroses were next followed by the Easter lilies and yellow calceolarias; next came more blossoms with white and pink geraniums; a change of scene was provided by the Ikebana club who built a Japanese garden in the area. This featured rocks, trees, goldfish in the pool and even a "deer-chaser." (Remember a bamboo rod which filled with water and dropped against a rock with a loud clunk.) Gloxinias were then used and probably the most popular display this year, that of tuberous begonias followed. The cavalcade continued with bromeliads, chrysanthemums and finally the year ended on a most colorful note with red, white and pink poinsettias.

Looking ahead the tentative display schedule is:

January-February	Cactus, Succulents
March	Orchid display
March-April	Easter display
April	Spring bulbs
May	Plant Sale display
June	Gloxinias
July-August	Tuberous begonias
September-October	Bromeliads
November	Chrysanthemums
December	Christmas display

Please remember that the Board of Trustees has established a Lobby Court Memorial Fund. This is used so the most handsome displays possible will greet our many visitors to the Education Building.



ATTENTION GUIDES — Past, Present or Future!

The Guides meeting on January 22 will be a slide show on the tropical and sub-tropical plants of the Conservatory, illustrating their growth and use. This has been a long term project of the guides and will be presented complete with narration. The time is 1 p.m. in the main room of the Denver Botanic Gardens House.

DENVER BOTANIC GARDENS, INC.
909 YORK STREET • DENVER, COLORADO 80206



JANUARY 1975

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Denver, Colorado

The House is in need of a brass floor lamp for the dining room. Mr. Higbee donated one which is most appropriate and now we would like to have a similar one for the other side of the room. We would be glad to pick it up so if anyone has a lamp that might be suitable, please call 297-2547.

The Sixteenth Annual Colorado Garden and Home Show will be held in Currigan Hall from January 31 to February 9, 1975. The theme is "A Touch of Spring" and a parade of patios will be featured. The hours are Saturdays noon to 10 p.m., Sundays noon to 6 p.m.; Wednesday matinee 2 to 10 p.m. and the remaining weekdays 6 to 10 p.m.

The Denver Botanic Gardens will have the membership tree on display so all plan to come down and visit us.

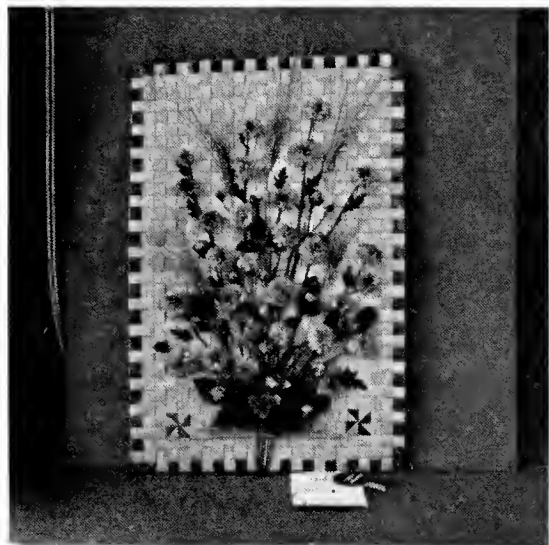


Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



FEBRUARY CLASSES

Just for fun! Children may be interested in learning the technique of drying flowers in *Flower Preservation*. This class on February 8 and 15 will meet at 9 a.m. in Classroom B. Students are requested to sign up ahead of time so the proper amount of material may be provided. The cost is \$3.00 and the class is limited to 15 children ages 12 to 15, please.



A change of pace will take place with a group *Tour of the Art Museum*. The museum's collection of 19th and 20th Century paintings will be discussed. After the tour, plan on remaining for a dutch-treat lunch. The group is limited to 20 so get your name in now, set up car pools with your friends and meet in the foyer of the Museum, 100 W. 14th Avenue Parkway, at 10:30 a.m. on February 19. No charge but plan on making a \$1.00 donation to the Art Museum, please.

Another free class will be provided on Saturday, February 22, in *How to Make Your Own Herbarium*. This will be helpful to those joining the field trips later or for those who may wish to collect on their own.

Remember Richard Jefferies who said: "The first conscious thought about wild flowers was to find out their names — the first conscious pleasure — and then I began to see so many that I had not previously noticed. Once you wish to identify them, there is nothing escapes . . ."

Dr. Zeiner will teach this class at 9 a.m. in the Herbarium.

Finally, if you were quick enough to sign up for *House Plants for the Amateur* don't forget the first date is February 6. (It may sound silly to mention but each class has some students who forget the opening date!)

If you could not enroll in the House Plant course perhaps you should consider buying the *Brooklyn Botanic Garden Handbook on House Plants*. No one is more aware of the many pitfalls and problems of growing house plants than the experts at the Brooklyn Botanic Garden. For many years they have conducted popular courses in raising all kinds of plants indoors and have answered thousands of questions posed by windowsill gardeners. Based on this experience of sensing the needs of indoor growers, twenty-three experts have written an informative paperback book which contains answers to the questions most often asked of the Gardens' Plant Information Service.

To aid in tracking down all the plants mentioned in the handbook, there is a directory to dozens of mail-order nurseries and also a very helpful list of further readings. Among the 58 illustrations are many showing attractive ways to decorate with house plants.

The "House Plant Primer" is available for \$1.50 at the Denver Botanic Gardens Gift Shop.



Lecture and Demonstration

"How to Grow House Plants" will be the title of an illustrated lecture to be given on February 12 at 8 p.m. in Horticulture Hall.

Mr. Ralph L. Snodsmith, Executive Director of the Queens Botanical Garden in Flushing, N.Y. will stress interior decoration and selection of suitable house plants along with cultural requirements in his talk. Mr. Snodsmith, a native of Illinois, with degrees from the University of Illinois in Floriculture and Ornamental Horticulture, has served in his present position for five years. He has written for such publications as *The New York Times — Garden Section*, and has conducted a weekly radio show aimed at aiding and educating the consumer horticulturist.

This lecture is limited to members and their guests only. Please present your membership card at the door. Members of the Associates will act as hostesses.

Good News and Bad News!

Ruth Christie who has done such fine work here (she is the female part of the Dr. Green troika and has arranged the stunning displays around the Lobby Court) was recently married. She will be living in Grand Junction. We shall miss her but our best wishes go with her!

Free Film!

Another award winning film from the American Horticultural Society will be shown on February 8 at 1:30 p.m. in Classroom C. "Beauty for All Seasons" shows the glories of Kingwood Center, Mansfield, Ohio, throughout the year! All Welcome.

And speaking of the American Horticultural Society, have you thought of the benefits of membership?

The American Horticulturist a bimonthly magazine, now in its fifty-second year — the only publication in the horticultural field offering original articles by both amateur and professional gardeners. Read about new plant introductions, culture, breeding plant diseases and pest control techniques of weed control notes on air pollution damage to plants and trees garden topics and insights into the new field of indoor gardening environmental horticulture landscaping tips and ideas how gardeners can attack visual pollution book reviews how-to-do-it material and much more in color, illustrated.

Seed Distribution Service provides members with a free choice of hundreds of seeds from unusual and rare specimens of plants and trees from all over the world. It is one of the Society's most popular services and a boon to the gardener who is looking for something different to grow.

Gardener's Information Service gives you thorough answers to your tough and technical questions in sensible down-to-earth language. An information resource for gardeners in all parts of the country.

News and Views the Society's award-winning bimonthly newsletter keeps members informed of the Society's activities. It's also full of new gardening ideas, landscaping inspirations environmental tips timely developments in the world of gardening and horticulture where to buy what when and how to plant hundreds of valuable items of information and your own questions answered in special columns by experts who write in spritely and informative language.

Information on the American Horticultural Society is available in the Helen Fowler Library or write:

The American Horticultural Society
Mt. Vernon, Virginia 22121

Also another project of the Society is a nationwide horticultural certification program awarding the "American Diploma in Horticulture," to applicants who meet prescribed standards, demonstrating art and skill in horticultural practices. The program is not conceived to compete with degree training in schools and colleges where the emphasis is more academic, with less stress on performance and practical gardening skills.

Requirements are a minimum of 24 months working experience, recommendations from at least three recognized horticulturists, and a brief but comprehensive outline of a project that shows an above-average horticultural achievement.

Qualified candidates undergo five hours of examinations emphasizing performance other than education. The examinations will be given at regional centers and administered by professional horticulturists and botanists. Deadline for applications is March 1st.

Forms may be obtained from the American Horticultural Society, Mt. Vernon, Virginia 22121 or call Dr. J. R. Feucht, 355-8306, for further information.

And lastly, your children may be interested to learn about the National Junior Horticultural Association which is affiliated with the American Horticultural Society. Their stated objectives are:

1. To promote and sponsor an educational program of projects and activities for youth which relate to a better understanding of horticulture. The program is designed both for those who wish to make horticulture a hobby and for those who wish to make it their profession.

2. To acquaint youth with the many and varied career opportunities, both vocational and professional, available in the horticultural industry.

They hope to reach these goals by projects and activities such as *Environmental Beautification*. Participation in this includes a wide variety of project categories: planting flowers and ornamentals, controlling erosion, developing and rehabilitating recreation areas, improving roadsides, and generally beautifying urban and rural "eyesores."

The *Production and Marketing Contest* has to do with the culture of a wide variety of horticultural crops (vegetables, fruits, flowers, or ornamentals) for home use or for commercial sale through such outlets as roadside stands, wholesale markets, retail stores, florists' shops, and nurseries. Also included is growing and selling vegetables and fruits under contract to canning or other food processing firms.

Evaluation of the project is based on a written report on organization, cost, cultural practices and procedures involved in the sale or use of the product.

Projects dealing with plant nutrition, the relation of light, temperature or water to plant response, the effect of various chemicals on growth, and reproduction or in extending the storage period for vegetables, fruits and flowers are just a few examples of interesting studies under the *Experimental Horticulture Project*.

Other contests and projects are available for students under 21 years of age.

The Denver Botanic Gardens will have a class on *Identification of Woody Ornamentals*, starting March 1, which it is hoped will be of interest to NJHA members. Look for it in the *Spring List of Classes* soon to be mailed. But in the meantime, if you are interested in learning more about NJHA, please call Ms. Peggy O'Neill at 935-5724.

Does the name of Liberty Hyde Bailey strike a responsive chord? This man for whom the most prestigious award in American Horticulture is named has been called "the most outstanding and productive individual in the entire history of horticulture and gardening in the U.S."

L. H. Bailey played an overwhelming part in shaping the direction of agriculture and gardening in the country. He served as a professor of horticulture at Michigan and later at Cornell where he was chosen director and first dean of the new College of Agriculture.

He was a prodigious writer: His *Standard Cyclopaedia of Horticulture* is often the first source turned to for help on questions. *Hortus II* and Bailey's *Manual of Cultivated Plants* are also still much used by today's gardeners.

All of the above leads to the fact that the American Horticultural Society gave the Liberty Hyde Bailey Medal to F. L. Steve O'Rourke this past year. Professor O'Rourke is well known to many of our members for he taught at Colorado State University for years. He also gave lectures in the Denver Botanic Gardens series. Our congratulations to him!

**DENVER BOTANIC GARDENS
CALENDAR OF EVENTS
FEBRUARY, 1975**

FEBRUARY

1)	9:30 a.m.	Botanic Gardens House — Main Room	Gloxinia Gesneriad Growers
3)	11:00 a.m.	Botanic Gardens House — Main—Dining & Kitchen	Rocky Mountain Belles
3)*	7:00 p.m.	Education Building — Lecture Room "B"	Floral Design Workshop — Mr. Lee Ashley
4)*	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
4)*	1:00 p.m.	Education Building — Lecture Room "B"	Ecology — Dr. M. Denham
4)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
4)	7:30 p.m.	Botanic Gardens House — Dining Room	Denver Audubon Society (Wildlife Workshop)
5)*	8:00 a.m.	Botanic Gardens House — Main Room	Equipment Class — Mr. Mike Clark
5)*	10:00 a.m.	Education Building — Lecture Room "B"	Dried Flower Arrangement — Mrs. Robert Kosanke
5)*	1:00 p.m.	Education Building — Lecture Room "A"	Tropical Plants of the Conservatory — Mrs. P. Hayward
5)*	7:00 p.m.	Education Building — Lecture Room "A"	"House Plants" — Mr. Richard Hannigan
5)*	7:00 p.m.	Education Building — Lecture Room "B"	Floral Design Workshop — Mr. Lee Ashley
6)*	8:00 a.m.	Botanic Gardens House — Main Room	Equipment Class — Mr. Mike Clark
6)*	10:00 a.m.	Education Building — Lecture Room "B"	House Plants for the Amateur — Mr. Richard Hannigan
6)*	6:30 p.m.	Education Building — Lecture Room "B"	General Botany — Dr. Hugh Wingate
6)*	7:30 p.m.	Education Building — Lecture Room "A"	Hobby Greenhouse Management — Mr. Robert Briggs
6)*	7:30 p.m.	Education Building — Lecture Room "C"	Home Landscaping — Mr. Al Rollinger & Mr. Larry Watson
6)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Open Space Council
6)	7:45 p.m.	Botanic Gardens House — Main Room	Denver Orchid Society
7)*	11:00 a.m.	Botanic Gardens House — Main—Dining & Kitchen	Civic Garden Club
7)*	7:00 p.m.	Education Building — Lecture Room "B"	"House Plants" — Mr. Dave Woodward
8)*	9:00 a.m.	Education Building — Lecture Room "B"	Flower Class for Children — Judy Weaver
8)	10:00 a.m.	Education Building — Lecture Room "A"	Colorado Organic Growers & Marketers Association
8)	1:30 p.m.	Education Building — Lecture Room "C"	Film — "Kingwood Center"
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10)*	7:30 p.m.	Education Building — Lecture Room "B"	Floral Design Workshop — Mr. Lee Ashley
10)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society
11)*	9:30 a.m.	Education Building — Lecture Room "B"	Civic Garden Club — Division "C"
11)*	1:00 p.m.	Education Building — Lecture Room "B"	Ecology — Dr. M. Denham
11)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
12)*	9:30 a.m.	Botanic Gardens House — Main Room	D.B.G. Guild
12)*	10:00 a.m.	Education Building — Lecture Room "B"	Dried Flower Arrangement — Mrs. Robert Kosanke
12)*	1:00 p.m.	Education Building — Lecture Room "A"	Tropical Plants of the Conservatory — Mrs. P. Hayward
12)*	7:00 p.m.	Education Building — Lecture Room "A"	"House Plants" — Mr. Richard Hannigan
12)*	7:00 p.m.	Education Building — Lecture Room "B"	Floral Design Workshop — Mr. Lee Ashley
12)*	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
12)	8:00 p.m.	Education Building — Horticulture Hall	"How to Grow House Plants" — Dr. Ralph L. Snodsmith (Executive Director - Queens Botanical Garden, Flushing, N.Y.)
13)*	10:00 a.m.	Education Building — Lecture Room "B"	House Plants for the Amateur — Mr. Richard Hannigan
13)*	6:30 p.m.	Education Building — Lecture Room "B"	General Botany — Dr. Hugh Wingate
13)	7:00 p.m.	Education Building — Lecture Room "A"	Sierra Club — Conservation Committee
13)	7:00 p.m.	Education Building — Horticulture Hall	Sierra Club — (Ski program)
13)*	7:30 p.m.	Education Building — Lecture Room "C"	Home Landscaping — Mr. Al Rollinger & Mr. Larry Watson
13)	8:00 p.m.	Botanic Gardens House — Main—Dining & Kitchen	Denver Rose Society

CALENDAR OF EVENTS FOR FEBRUARY (Continued)

14)*	7:00 p.m.	Education Building – Lecture Room “B”	“House Plants” – Mr. Dave Woodward
14)	7:30 p.m.	Botanic Gardens House – Main–Dining & Kitchen	Denver Dahlia Society
15)*	9:00 a.m.	Education Building – Lecture Room “B”	Flower Class for Children – Judy Weaver
16)	1:30 p.m.	Botanic Gardens House – Main–Dining & Kitchen	Hemerocallis Society
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17)*	7:00 p.m.	Education Building – Lecture Room “B”	Floral Design Workshop – Mr. Lee Ashley
18)	9:00 a.m.	Education Building – Horticulture Hall	“Improving Your Professional Image & Pruning Practices” – Dr. J. Feucht & Ken Hostetler
18)*	1:00 p.m.	Education Building – Lecture Room “B”	Ecology – Dr. M. Denham
18)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club
18)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Jr. Bonsai Club
19)*	1:00 p.m.	Education Building – Lecture Room “A”	Tropical Plants of the Conservatory – Mrs. P. Hayward
19)*	7:00 p.m.	Education Building – Lecture Room “A”	“House Plants” – Mr. Richard Hannigan
19)*	7:00 p.m.	Education Building – Lecture Room “B”	Floral Design Workshop – Mr. Lee Ashley
19)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Mycological Society – Workshop - “1” Mr. George Grimes
20)*	10:00 a.m.	Education Building – Lecture Room “B”	House Plants for the Amateur – Mr. Richard Hannigan
20)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons
20)*	6:30 p.m.	Education Building – Lecture Room “B”	General Botany – Dr. Hugh Wingate
20)	7:00 p.m.	Education Building – Horticulture Hall	Sierra Club
20)*	7:30 p.m.	Education Building – Lecture Room “C”	Home Landscaping – Mr. Al Rollinger & Mr. Larry Watson
20)	7:30 p.m.	Education Building – Lecture Room “A”	Organic Gardening Club of Denver
21)*	7:00 p.m.	Education Building – Lecture Room “B”	“House Plants” – Mr. Dave Woodward
21)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Botany Club
22)	9:00 a.m.	Education Building – Herbarium	“How to Make Your Own Herbarium” Dr. Helen Zeiner
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24)*	7:00 p.m.	Education Building – Lecture Room “B”	Floral Design Workshop – Mr. Lee Ashley
25)*	1:00 p.m.	Education Building – Lecture Room “B”	Ecology – Dr. M. Denham
25)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society
26)*	1:00 p.m.	Education Building – Lecture Room “A”	Tropical Plants of the Conservatory – Mrs. P. Hayward
26)*	7:00 p.m.	Education Building – Lecture Room “A”	“House Plants” – Mr. Richard Hannigan
26)*	7:00 p.m.	Education Building – Lecture Room “B”	Floral Design Workshop – Mr. Lee Ashley
26)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Mycological Society – Workshop - “1” Mr. George Grimes
26)	7:30 p.m.	Botanic Gardens House – Dining Room	Colorado Open Space Council – (Wilderness Workshop)
27)*	10:00 a.m.	Education Building – Lecture Room “B”	House Plants for the Amateur – Mr. Richard Hannigan
27)*	6:30 p.m.	Education Building – Lecture Room “B”	General Botany – Dr. Hugh Wingate
27)*	7:30 p.m.	Education Building – Lecture Room “C”	Home Landscaping – Mr. Al Rollinger & Mr. Larry Watson
27)	7:30 p.m.	Botanic Gardens House – Main–Dining & Kitchen	Men’s Garden Club of Denver
28)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
28)*	7:00 p.m.	Education Building – Lecture Room “B”	“House Plants” – Mr. Dave Woodward
♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦			

MARCH

1)	9:30 a.m.	Education Building – Lecture Room “A”	National Jr. Horticulture Class
1)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers

*Members or enrollees only.



Ruth Nelson Talks February 20

Ruth Ashton Nelson, botanist and author, will describe her activities in preparing her latest book, *Plants of Zion National Park*, when she speaks informally to members of Around the Seasons Club, February 20 at 11 a.m. at Botanic Gardens House. Visitors are welcome.

"Posies to Print! or *Making a Plant Book* involved collecting, recording data, identifying and preparing herbarium specimens for the Zion National Park collection at Springdale, Utah. During the past four years Mrs. Nelson has lived for several weeks at different times in park quarters and most of that time was spent in the field. She did most of the identifying at her home near Estes Park. Currently her book is with the book designer and the publisher, Zion Natural History Association, is hopeful it will be available for the 1975 season.

Mrs. Nelson's previous books are *Plants of Rocky Mountain National Park*, first published in 1933 by the U.S. Park Service, revised in 1953, and updated and republished in 1970 by the Rocky Mountain Nature Association; and *Handbook of Rocky Mountain Plants*, also published in 1970, in which she described plants of the Rocky Mountains from Northern Arizona and New Mexico to Canada. Each of her publications was prepared for the amateur botanist as well as for the classroom.

Mrs. Nelson, as a child, spent many summers in the high Colorado Rockies where she developed an intense interest in wildflowers. At Mt. Holyoke College she majored in botany and writing. For several years she worked for the government at Rocky Mountain National Park and also toward her Master's degree in botany at now Colorado State University. She is the wife of the late Aven Nelson, one of the great Rocky Mountain botanists, professor of botany and curator of the herbarium at the University of Wyoming. Together they spent many summers collecting plants and working in the herbarium. She has travelled and photographed wildflowers throughout Europe and spent many months studying wildflowers and setting up a private herbarium in Greece.

Something to Anticipate . . .

Last February the first of the spring bulbs bloomed! We can all hope to see flowers again soon so watch in the sunken garden area around the Golden-rain trees. The first of all last year was a yellow *Crocus chrysanthus* 'E. P. Bowles.' Also other early plants were *Iris danfordiae* and *Eranthis hyemalis*, both with yellow flowers. *Iris histriodes* var. 'Major' is blue and also watch for *Anemone blanda* 'Rosea' light red and *C. chrysanthus* 'Snowbunting' a beautiful white.



Plants Alive, the lovely indoor plants and greenhouse journal, has an idea for the dull days of winter that some of our readers might wish to try. Why not make a crocus ball! First, take sphagnum moss and shape it into a ball. Then place crocus bulbs all over the moss; tie in place with green string and cover with more moss. Then trim the moss but leave a long string to hang by. Soak the ball well and hang in a cool, dark place. When sprouting starts, moisten more often. When buds appear bring the ball into the light and finally enjoy the blooms.

Seedling Trees Available

Landowners who plan to purchase seedling trees for spring planting from the Colorado State Forest Service may pick up order blanks now. Blanks are available from local offices of the CSFS, CSU Extension Service and Soil Conservation Service.

Landowners wishing to buy seedlings must agree to some conditions: the planting site must be used for conservation planting and trees cannot be sold as living specimens at a later date.

And another project of the Colorado State Forest Service is a new publication, "Tree Talk!" which is available in the Library. The purpose of the pamphlet is to establish a communication link with municipal foresters. However, many of the articles are of general interest. For example, did you know that crews for the CSFS surveyed the City and County of Denver last summer for Dutch elm disease? As of August 30, Denver had a population of 34,109 American elms. Of these 4,917 are symptomatic of DED. Intensive sanitation and an increase in the use of methoxychlor protective sprays have definitely helped to slow DED in the metropolitan area.

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As reported in the last newsletter, we have a fine new group of guides who are currently hard at work providing tours for the many visitors in the conservatory. As spring nears we always have more requests than can be granted so the Guides Committee has completed two projects to use the volunteers' time in a more efficient manner.

A large shadow box has been built which shows tropical fruits like the ear pod and the kukui nut. This handsome box is displayed on its own easel, both made by Harold Bergkamp, husband of one of the guides. Members of the committee provided the plant material, did the background art work and the informative cards.

Another project which is planned for use when we have more visitors than can be toured at one time, is a slide show of the tropical plants in the conservatory. Over 70 slides were provided by Peg Hayward and Ruth Van Etten. A written narrative to go with the slides makes a fine educational presentation. The Guides are also working on an informative note book which is soon to be completed.

Too, an inventory of plants has been compiled by Larry Latta and Beverly Nilsen. This work of several months' duration will be particularly helpful to the guides for now we know exactly what plants are present in the conservatory.

Finally, a recommendation to all guides or to anyone else interested in the program — please see *The American Association of Botanical Gardens and Arboreta*, July, 1974. The emphasis of the issue is on youth and four articles deal with educational programs from Longwood to Berkeley.

Reminder

Although we and the printers try hard, we do know that not all members receive the newsletter by the first of each month. For this reason the first week of the next month is always shown on the Calendar of Events.

Care to Share?

Black and white glossy prints of wildflowers, native trees and shrubs, as well as cultivated species, will be gratefully accepted for the photo file at the Denver Botanic Gardens. Pictures are needed as illustrations in the Gardens' publications. Makers will be acknowledged whenever their pictures are used. Please contact Margaret Sikes, 297-2547 ext 23 if you have any jewels you are willing to share or bring them to Helen McCloskey at the Botanic Gardens House.

The National Parks and Conservation Magazine reports in its November issue that preservation of endangered species of plants is finally receiving long overdue attention.

The Endangered Species Act of 1973 directed the Smithsonian Institution to review species of plants that are now or may become endangered or threatened and methods of conserving such species.

Accordingly in cooperation with the other federal agencies and all 50 states, the Smithsonian had assembled by August 1974 a preliminary list of species of plants that are endangered, threatened or extinct. Heretofore not enough was known about the status of plants in order to plan an effective conservation program for them. The Smithsonian's first phase effort will provide the information with regard to the higher plants. The second phase will include identifying endangered nonvascular plants.

"Sweetheart of the Rockies" is the theme of the Rocky Potters African Violet Club's annual Plant Show and Sale. The event is scheduled for February 8th and will be held at the Holiday Inn, 800 28th Street in Boulder. The club anticipates a wide variety of plants to be displayed. Everything from leaves to blooming plants will be for sale. For further information contact Sharon McElhoe, 421-0641 evenings.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR MAY

In 1972 this column started with the following sentence: "After an early start, an abrupt slowdown, and a new start, spring seems to be on its way". This sentence could be repeated this year in light of the rather mild conditions during March, then the below zero temperatures on April 2, followed by another warm-up. Anyone who has lived in Colorado long enough knows that one should take advantage of the mild periods between cold snaps to get the garden ready. I hope that you did this year so that you do not have to spend a lot of time now getting the soil ready for planting.

May is planting month and now would be the time to plant out any new perennials you plan to add to the garden; and by the middle of the month, most all annuals can be put out with the exception of the very tender types, such as tomatoes and eggplant. For these I would wait until Memorial Day, or at least until night time temperatures are over 50 degrees. Setting them out too soon tends to hold them back, and fruit-set usually does not occur until the fifty-degree night time average has been reached.

For good quality bedding plants, as well as trees and shrubs, you should shop early. In fact, for trees and shrubs, shopping should be well completed by now unless you intend to purchase container stock only.

When buying plants, look for quality first and price second. For example, petunias and other bedding plants should be dark green in color, have stout stems and short internodes (leaves close together). Preferably, they should be branching at the base which is an indication that they have been pinched back and were grown in uncrowded conditions in a fertile soil. Bedding plants that are tall and stringy will usually be very slow to establish and will require additional pinching back at planting time. This will usually set them back several days to weeks.

I also prefer to purchase bedding plants not in flower. It is better to pinch off the flowers at planting time because root growth is more important and when plants are in flower there is a tendency to have slower root growth.

When putting your bedding plants out, particularly those in peat pots, or in similar "plantable" containers, be sure to break the peat pots in several places to allow root penetration, and plant them so that the rim of the pot is below soil level. If the rim is exposed to the air, it will act as a wick, drawing moisture from the root zone.

Plants that are in plastic containers or similar "non-plantable" types will usually have a dense ball of roots when they are taken from the container. At planting time, take a sharp knife and score the sides of the root ball in several places about ¼" deep. This will promote rooting out into the new soil and prevent the tendency for the root system to stay within the ball.

Vegetable gardens are the "in" thing and in fact, many are trying to plant vegetables instead of garden flowers. I would like to suggest a companion garden. Many vegetables are attractive in themselves and could be considered com-

panions to the perennials and annuals. Leaf lettuce comes in various textures and colors and makes an excellent edging plant. The red-leafed forms and the crisped varieties add interest to a garden and would thus serve a double purpose; form an edging around the garden and provide salads for your table. The rhubarb variety of chard with its red stems is also an effective vegetable. The same could be said for beets. They would incidentally, tolerate a considerable amount of shade. There is also no reason why onions and chives could not be used as a low edging in the front of the flower garden. Whether any of the latter actually repels insects is quite debatable. I have seen no real evidence that they do, and in fact, chives have their own insect pests and thrips on onions could be a problem with other garden flowers.

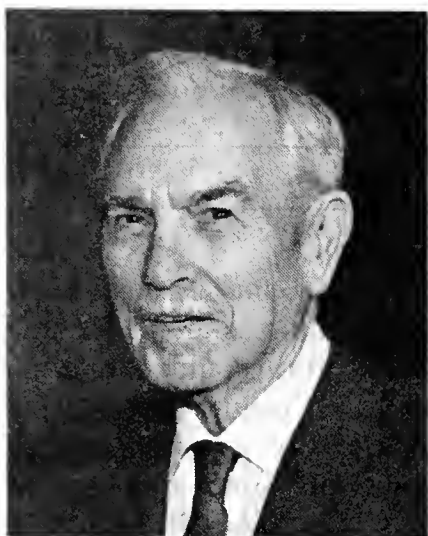
Speaking of insects that will soon be upon us in droves, before you grab the sprayer, be sure spraying is warranted. Frequently we apply pesticides unnecessarily because of the habit of spraying at the sight of the first bug. Find out what the insects are first. Decide whether they are really doing damage, then apply appropriate controls as necessary. For those wishing to experiment with biological methods, keep in mind that you should not expect miracles and that parasites and predatory insects in the artificial environment of our cities, rarely, if ever, give satisfactory results. Such biological methods are way more effective in large areas or on single crops such as alfalfa. At least one should not expect perfect control. After all, if a beneficial insect destroys its own food supply, it will have to die or move into someone else's yard.

It is hard to predict what the water situation will be this year. I personally feel that we are going to see limitations on lawn watering but this does not mean you cannot still have a lawn. Many of us are so accustomed to turning on a sprinkler on an every other day basis that we have gotten into the habit of wasting water. It is possible to keep a lawn green even through the hot, dry months by applying water properly and not wasting the water. To do this, one must know what type of soil is being watered. Heavy clays cannot be watered rapidly since very little moves into the soil and more will tend to run off. Watering slowly but deeply is a more effective use of water; and the less frequent the better. Deep and infrequent watering will tend to promote deeper rooting of the turf. Keeping the lawn cut to a height of no less than one, and three-fourths inches will also help to conserve moisture and be better for the grass as well. Rather than watering on an every other day schedule, try to water according to the needs of the grass. A good indicator of a need for water is when the grass begins to turn a bluish cast, or when foot prints remain in the turf. In any case, there is no single recommendation that can be given for watering. Each yard and each soil, and the various types of exposure are variables that must be taken into consideration.

Dr. J. R. Feucht

* * * *

In the first three months of 1975, the Gardens played host to 8,411 more visitors than in 1974.



Members will be saddened to learn of the death of Dr. A. C. Hildreth. Dr. Hildreth served as Director of the Cheyenne Horticulture Field Station for 14 years prior to assuming the Directorship of the Denver Botanic Gardens in July 1959. He became Director Emeritus in October 1966.

A lengthy catalogue of accomplishments could be written for this distinguished horticulturist, but all of the honors pale before the character of the man himself.

His great knowledge grounded in his scientific research was generously shared in person and in his writings. Always the information was imparted with a twinkling eye and spiced with dry humor and sly wit. Goodbye, Dr. Hildreth. We won't forget you!

Memorial funds for Dr. Hildreth have been designated for the Children's Garden, a project dear to his heart.

PLANT SALE

The Denver Botanic Gardens Annual Plant Sale will be held Friday and Saturday, May 9 and 10 from 9:30 a.m. to 5:30 p.m. in and around the Boettcher Memorial Center, 1005 York Street.

During this event a wide selection of locally grown plants, suitable for a variety of growing conditions, will be offered: annuals, perennials, berries, herbs, vegetables, trees, shrubs, rock garden and ground cover plants, African violets, house plants.

Each year volunteers who specialize in the culture of their favorites sell thousands of plants and give information and suggestions for planting.

This year's accent will be on growing your own flavorful fruits and vegetables, a pursuit which home gardeners have found assures tastier, more nutritious food and affords healthful outdoor exercise. At the Vegetable Booth will be found plants of pascal celery, eggplant, broccoli, cabbage, cauliflower, peppers, cucumbers and cantaloupe, plus many varieties of tomatoes. The Berry Basket has the same fine selection of plants as last year, but has increased quantities of all items so no one will go away empty handed. One addition to look for is 'sequoia' strawberry, a large foliage, one crop plant that makes a lush ground cover.

Flowers at the Annuals Booth will range from *Ageratum* to *Zinnia* with many letters in between. Some plants to watch for include 'Redskin' dahlias, 'Blue Skies' petunias and open faced snapdragons like 'Madame Butterfly' and 'Little Darling'.

Perennials are a main stay of all gardens. If you would like to do some research prior to the sale, look at *Arnoldia*, November, December 1974 and January, February 1975. These publications of the Arnold Arboretum are beautifully

illustrated with line drawings and pictures and are full of information on varieties and culture of perennials. They are available in the Helen Fowler Library.

While you are there be sure to visit the Book Nook where library volunteers will be selling used books and magazines. Proceeds will be used to expand the Library collection.

AND LAST CHANCE If you have been intending to donate books for this year's Library used book sale there are only a few days left. Contributions may be left at the Gatehouse or at the Library, marked for the sale. The dates of the sale coincide with those of the Plant Sale — May 9th and 10th.

This year the House Plant booth will offer six different carnivorous plants, plus a miniature plastic greenhouse kit containing carnivorous plants, moss and growing instructions. *Lithops*, *ficus*, orchids, cacti, bromeliads, large specimen plants, the ever popular "string-of-beads", exotic ferns, hibiscus, bougainvillea and rare terrarium plants will also be available.

New among the native wild flowers and ground covers featured at the Rock Garden Booth will be a red flowered cinquefoil, *Potentilla thurberi*. Actually a native of New Mexico and Arizona, the plant, which has been grown especially for this sale, is hardy at 8,500 elevation and blooms from July into September and October.

Two columbines, the alpine, *Aquilegia saximontana*, with dainty white cup and blue saucer on 3 inch plants, and the blunt-spurred red columbine, *A. elegantula*, on plants less than a foot high will be prized by dedicated rock gardeners. Of course, Colorado columbine will be available also.

Other popular natives include western shooting star, saxifrage, blue-eyed grass, as well as pink plumes, pussytoes and a few Easter daisies. A red penstemon, *Penstemon pinifolius*, resembling tiny junipers growing in a mat with vermilion red spikes 6 to 8 inches tall when in bloom is an excellent ground cover. Among cultivated plants will be sunroses in various colors, coralbells, unusual sedums, named varieties of hen and chicks plus various pinks, penstemons and veronicas.

Many kinds of annual and perennial culinary herbs, plus a variety of scented geraniums will interest all who visit the Herb Booth. Aside from the old kitchen standbys like chives, parsley, marjoram, thyme, basil and tarragon, look for lemon balm, salad burnet, lovage, coriander and caraway. Dittany-of-Crete and a decorative curry plant have proved to be especially interesting in indoor and outdoor plantings.

Macrame hangers from elegant to plain-Jane practical and hangers of wooden beads, seashells, and lucite chain can be found at the Patio Show of the Gift Shop.

A wide selection of planters and cache pots in vibrant color, subdued patterns and color in ceramic, glass and basketry will be assembled for your choice.

Included will be cache pots in elegant porcelain, fanciful animal and insect decorated planters and bonsai dishes in basic design. Tools and "how-to" books for making terrariums are other items to be shown. For the unusual, try one-of-a-kind handblown glass terrariums in unique design or handcrafted stained glass originals by Gallus.

Items for the bird lover include birch bark teepees, rustic houses of unpeeled bark, ceramic birdbaths, and hummingbird feeders.

Other products offered will be copper fountains; wind-chimes in bronze, colored glass, ceramic or bamboo; wrought iron plant display racks; bamboo plant stands and baskets in a wide selection of shapes, sizes and designs.

DENVER BOTANIC GARDENS
CALENDAR OF EVENTS
MAY, 1975

MAY

1)*	9:00 a.m.	Education Building — Horticulture Hall	Solar Energy Conference
1)*	7:30 p.m.	Education Building — Lecture Room "C"	Colorado Open Space Council — Board Meeting
1)	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society
2)*	9:00 a.m.	Education Building — Horticulture Hall	Solar Energy Conference
2)*	11:00 a.m.	Botanic Gardens House — Main - Dining and Kitchen	Civic Garden Club
3)*	9:00 a.m.	Education Building — Lecture Room "B"	Bottle Gardens — Mr. R. Hannigan
3)	9:30 a.m.	Botanic Gardens House — Main Room	Gloxinia Gesneriad Growers
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6)*	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
6)*	3:30 p.m.	Education Building — Lecture Room "C"	Children's Garden Meeting (Advanced)
6)	7:30 p.m.	Botanic Gardens House — Main Room	Denver Bonsai Club
6)	7:30 p.m.	Botanic Gardens House — Dining Room	Denver Audubon Society (Wildlife Workshop)
7)	7:30 p.m.	Botanic Gardens House — Main Room	Colorado Mycological Society
8)*	3:30 p.m.	Botanic Gardens House — Dining Room	Development & Public Relations Meeting
8)	8:00 p.m.	Botanic Gardens House — Main Room	Denver Rose Society
9)	9:30 a.m.	Education Building — Horticulture Hall and Surrounding Area	ANNUAL PLANT SALE — OPEN TO PUBLIC 9:30 a.m. — 5:30 p.m.
9)	7:30 p.m.	Botanic Gardens House — Main - Dining and Kitchen	Denver Dahlia Society
10)	9:30 a.m.	Education Building — Horticulture Hall and Surrounding Area	ANNUAL PLANT SALE — OPEN TO PUBLIC 9:30 a.m. — 5:30 p.m.
10)	10:00 a.m.	Botanic Gardens House — Main Room	Colorado Organic Grower's & Marketer's Association
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12)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society Meeting
12)	7:30 p.m.	Botanic Gardens House — Main Room	Sierra Club (Wildlife Workshop)
13)*	9:30 a.m.	Education Building — Lecture Room "B"	Civic Garden Club — Division "C"
13)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
14)	7:30 p.m.	Education Building — Lecture Room "A"	Colorado Mycological Society
14)*	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
15)*	10:00 a.m.	Botanic Gardens House — Main Room	Around the Seasons Meeting
15)	7:30 p.m.	Education Building — Lecture Room "C"	Organic Gardening Club of Denver
16)	7:30 p.m.	Education Building — Herbarium	Denver Botany Club
17)	8:00 a.m.	Botanic Gardens House — Parking Lot	Field Trip to N.C.A.R. — Boulder - Limit 20 (8:00 a.m. at D.B.G. or 9:00 a.m. at N.C.A.R. Parking Lot, Boulder)
17)	8:30 a.m.	Botanic Gardens House — Main Room	American Society of Landscape Architects
17)	9:30 a.m.	Education Building — Horticulture Hall	Men's Garden Club of Denver — Gardening Symposium Board of Directors Meeting Box Lunch
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19)*	2:00 p.m.	Education Building — Lecture Room "A"	Library Committee Meeting
20)	7:00 a.m. — 7:00 p.m.	Education Building — Horticulture Hall	ELECTION DAY
20)	7:00 p.m.	Botanic Gardens House — Main - Dining and Kitchen	Rocky Mountain African Violet Council
20)	7:30 p.m.	Education Building — Horticulture Hall	Sierra Club
20)	7:30 p.m.	Education Building — Lecture Room "B"	Denver Bonsai Club
21)	9:00 a.m.	Botanic Gardens House — Parking Lot	PLANT LIFE FIELD TRIP — Dr. E. H. Brunquist

CALENDAR OF EVENTS FOR MAY (Continued)

21)	7:30 p.m.	Education Building – Lecture Room “A”	Colorado Mycological Society
22)	7:30 p.m.	Education Building – Lecture Room “A”	Capitol Hill United Neighborhood Meeting
22)	7:30 p.m.	Botanic Gardens House – Main - Dining and Kitchen	Men’s Garden Club of Denver
23)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
24)*	7:00 a.m.	Botanic Gardens House – Parking Lot	Field Trip to Pawnee Grassland – (7:00 a.m. at 909 York or 9:00 a.m. at Briggsdale) Mr. Steve Cowgill, Instructor (Limit 20)
27)*	4:00 p.m.	Botanic Gardens House – Conference Room	Board of Trustees Meeting
27)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society Meeting
28)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council (Wilderness Workshop)
31)	8:30 a.m.	Botanic Gardens House – Main Room	American Society of Landscape Architects
31)	1:30 p.m.	Education Building – Horticulture Hall	Iris Society Show & Sale – OPEN TO PUBLIC 1:30 to 5:00 p.m.

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JUNE

1)	9:00 a.m.	Education Building – Horticulture Hall	Iris Society Show & Sale OPEN TO PUBLIC 9:00 a.m. – 5:00 p.m.
3)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
3)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
3)	7:30 p.m.	Botanic Gardens House – Dining Room	Denver Audubon Society (Wildlife Workshop)
3)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
4)	9:00 a.m.	Education Building – Horticulture Hall	Colorado Water Color Exhibition Show (Through June 19th)
5)*	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council – Board Meeting
5)	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society
6)	9:00 a.m.	Education Building – Horticulture Hall	LEADERSHIP DENVER
7)*	9:00 a.m.	Education Building – Lecture Room “B”	Rocky Mountain Belles – (Judging Class, Instructor: Mrs. Emma Lahr)
8)*	9:00 a.m.	Education Building – Lecture Room “B”	Rocky Mountain Belles (Judging Exam)

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**For members or enrollees only.*

For a Mother's Day gift sure to please, make your selection from the many garden and home oriented gifts shown in the Gift Shop itself!

We are not having a film this month as usual, but will have continuous showings all day, both days, in Classroom A during the Plant Sale. Some of the titles are: "An Educated Green Thumb," "The World of Roses", and "Foliage Plants for Interiors".

Last year we sold 104 memberships at Plant Sale, so steer your friends toward the Membership Booth and let's top that record!

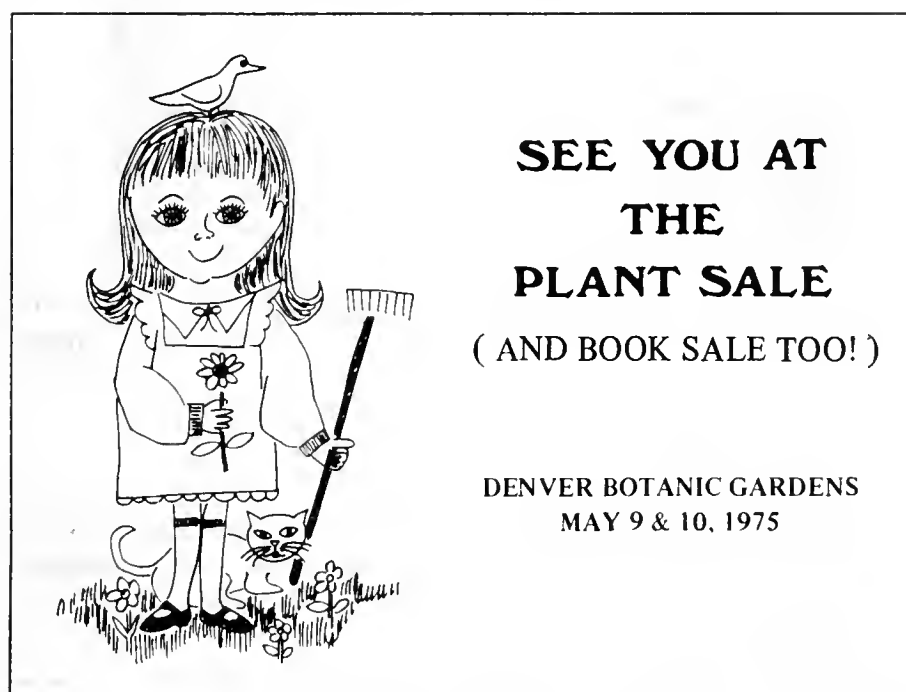
Finally, you can help the Gardens grow by donating your surplus plants. Any type of growing plant, including herbs, shrubs, trees, rock garden or ground cover, miniature iris any growing plant can be sold and will be most appreciated.

Your donations may be brought through the Gaylord Street entrance beginning Monday, May 5. After entering the gate, turn left and place your donation on the wood chip surface. To help preserve your plants, they can be placed in cans, cottage cheese or milk cartons. Covering freshly dug plants with plastic, after sprinkling, helps retain moisture. Please identify and label your plants when possible.

Besides your plants, we can use you! Willing workers are needed in all areas. Call 297-2547, leave your name and area where you'd like to help and we will call you. It's fun and you're needed.

REMINDER — THE GARDENS WILL BE CLOSED AT NOON ON THURSDAY, MAY 8, SO WE CAN GET READY FOR THE BIG DAYS TO FOLLOW. SEE YOU ON MAY 9 AND 10!

If you don't help, you may have to stand in line at Plant Sale, if so, cheer your spirits by admiring the over 4,500 tulips planted near the display beds along York Street. The Netherlands Flower-Bulb Institute donated many beautiful varieties which were planted last October. Some to watch for include Darwin type: 'Aristocrat', 'Sweet Harmony' and 'Queen of Night'. Darwin hybrids: 'Oxford', 'Jewel of Spring', and 'Gudoshnik'. Lily flowered types: 'West Point', 'Red Shine', 'Mariette' and 'White Triumphator' and Mid season: 'Sulphur Glory' and 'First Lady'.



Congratulations to:

Lew Hammer of Lew Hammer, Inc., Denver, has been elected president of the Associated Landscape Contractors of America. Hammer's firm, the largest landscape contractor in Colorado, won an environmental award for its landscaping of Denver Marriott Hotel.

MAY CLASSES

Dr. Brunquist will lead a *Field Trip* on May 21. Please meet at 9 a.m. at 909 York Street. Bring lunch and share expenses with the driver. Since our participants seem to be better taxonomists than mathematicians, the mileage is figured thusly: 6¢ per mile divided by all in the car, including driver. Example: 60 miles @ 6¢ per mile \$3.60; occupants of car, driver plus 3 riders = 4; \$3.60 divided by 4 = 90¢ per person for the trip.

The above is especially important on trips like that on May 24 to *Pawnee Grasslands* since it is a long drive. Meet at 7 a.m. at 909 York Street or at 9 a.m. at Crow Valley Park in Briggsdale, take Hwy. 14 out of Ault. Limit 20 and please, no sign-ups before May 12. When you do sign up, please indicate if you can drive.

Those of you who are going on this trip might enjoy looking at *An Interpretive Resource Analysis of Pawnee Buttes, Colorado*. This was written by R. J. Badaracco as partial requirement for his Ph.D. degree from Colorado State University and is available in the Helen Fowler Library.

If you really wish to study this fascinating area, a proposed National Monument Site, the Denver Audubon Society and the University of Northern Colorado will sponsor a Grasslands Institute there June 16 to 22.

For more information, please contact Dr. Jim Wright at 1227 Quince Way, Denver, 80321.

If you were quick enough to sign up for *Bottle Gardens*, remember the date, May 3 at 9 a.m., Classroom B. Bring a wide mouthed, clear glass bottle, preferably 1 gallon or larger.

SPECIAL FIELD TRIP — Steve Cowgill has volunteered to lead a field trip on May 17 to the Boulder area. As those of you who may have gone before know, this area is one where many different species may be seen in a relatively small area. According to Dr. Weber, plants have been moving into and out of the Colorado Front Range ever since it was lifted up. The Rocky Mountains have been at once a highway and a barrier to migration so that the area is an intricate mosaic of altitudes, slopes, exposures, microclimates and ecological gradients of all sorts and the distribution of plants mirrors this complexity.

Meet at 8:00 a.m. at 909 York Street, or at the parking lot of the National Center for Atmospheric Research at 9:00 a.m. Limit 20, please call and sign up.

Does the name *Albizzia* strike a chord? If not check Bailey's *The Standard Cyclopedia of Horticulture*. It is a surprise to find that tree listed in *The Trees of Boulder* by Campbell Robertson. Mr. Robertson is working on a new survey of trees of Boulder. The ultimate goal is to cover all woody species but this draft form lists only deciduous tree form specimens; needle-leaved trees are not included; shrubs, and shrubby form of species, which occur only sometimes in tree form, are not listed, and the coverage of fruit trees is only partial. Also, specimens of less than 2 inch trunk caliper are usually not shown.

It is listed at this time with the hope that other interested persons in Boulder will add to Mr. Robertson's endeavors, by detecting errors in locations or identifications; by calling attention to better specimens or by discovering additional rare species.

The Trees of Boulder is available at the Chamber of Commerce in Boulder for 75 cents.

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TREE OF THE MONTH European Beech, *Fagus sylvatica*

This tree is featured, not because it is recommended for the area, but rather because it is an unusual tree that can be grown if one uses due care in getting the tree established, and pays particular attention to the soil.

The European Beech is a striking tree both winter and summer. In winter, it stands out because of the smooth bark and in summer, because of its glossy, dense foliage. The one pictured is located at 113 East 3rd in Denver. The trunk is about 24' in diameter and the tree is over 40 feet tall. Another fine specimen is located at St. John's Cathedral at 13th and Clarkson Streets in Denver. All of them found in Denver so far appear to be of the Copper Beech variety, *F. s. atropunicea*. This variety is noted for the coppery-red spring growth.

There are many other forms of European Beech but apparently they have not been tried in Denver. Included in this group is the weeping form up-right, fastigita form with a lombardy poplar-like growth and a fern leaf variety which has deep-cut margins. Cold hardiness does not seem to be a big problem as it will thrive in our winter and alkaline soils. Perhaps this is why most of the Beech found in Denver are in the older, more acid soils.

Even though this species is not generally recommended for this area, the hobby gardener may wish to give it a try, in order to have something distinctively different in the yard.

The Men's Garden Club will present a Symposium on May 17, from 9:30 to 12 noon in Horticulture Hall. At this session, open to all, many timely topics will be discussed. For example, Dick Hannigan will teach about *Growing Vegetables on Your Lanai* (note move from A and 9 o'clock as listed in April Newsletter). Other informed and

stimulating speakers will be on the program to discuss Organic Gardening, Pests Diseases and Other Controls, and Lawn Care and Management.

Plan now to attend.



Region Twenty of The American Iris Society will present the 1975 IRIS SHOW AND SALE at the Horticulture Hall, 1005 York Street, Denver Botanic Gardens.

Saturday, May 31	1:30 PM to 5:00 PM
Sunday, June 1	9:00 AM to 5:00 PM

The public is invited without admission charge to view the show iris and/or enter horticultural stalks and/or arrangements.

All Welcome!

Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.
Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR JUNE

June at last! After a very slow warm-up in spring and what seemed to be an early start and then a very sudden slow-down, perhaps, now we can sit back and enjoy watching our gardens grow a little bit.

At the time of writing this column, weather conditions indicate a continued dry period with below-normal precipitation, frequent gusty, drying winds, combined with below-normal temperatures. In the March newsletter, I touched on drought and the under abundance of moisture in the future. Since that time, we have had plenty of snows in the mountains to rebuild our reserves of water. At the same time, I think we should be concerned about water and the conservation of water. The Denver Water Department has published a very excellent brochure entitled, "44 Ways To Be Water Wise." In case you have not received it or have not read it, I would like to point out some of the things that were mentioned, particularly as it pertains to home gardeners.

- Instead of using a hose to clean the sidewalks and to remove leaves from the lawn, use a broom and a rake
- Improve Denver's typically poor soils before planting lawns, trees, shrubs, flowers and vegetables. Use organic matter such as compost, peat moss and barnyard manure rototilled into the soil at least 6 inches deep. These amounts will help to hold water and also give you more healthy plants.
- Areas of steep slopes, where turf grasses may be difficult to water, should be considered a good place to use one of the many kinds of ground covers. Information of ground covers available can be obtained from any one of the Colorado State University Extension Offices.
- Gravel, bark or wood chips over thick plastic sheeting can be utilized in areas that dry out quickly. Avoid too large an area of plastic, however, as it will tend to increase summer heat.
- Use plants adaptable to sun-wind exposure and a minimum of water. Included are the following: Hackberry, Russian-olive, the pines, Siberian Peashrub and Buffalo-berry.
- Soils that are of a heavy clay texture will take water more slowly than sandy soils. Learn to apply water with the proper sprinkler so that watering is done at the proper rate rather than allowing it to run off and down the gutters.
- Lawn areas on south sides will need watering more frequently than on north sides. If you have a sprinkler system, try to adjust your watering schedule to meet the needs of the turfgrass.
- Rather than watering a lawn on an every-other-day scheme, let the lawn tell you when it needs water. When grass turns a dull gray-green, or when foot prints remain in the grass, it's time to water. Watering before this happens not only wastes water, but will tend to encourage more shallow rooting.
- Use root watering devices such as the Ross Root Feeder for shrubs, trees and other deep-rooted plants. This puts the water where it is needed with virtually no waste. In addition, it will help to aerate heavy clay soils.

- Keep the lawn mowed to a reasonably tall height, preferably no less than one and three-fourths inches. A lawn cut too short encourages water loss as well as weeds. Weeds compete for water.
- Use mulches such as wood chips, coarse compost and other materials that will not pack tightly. A list of suitable mulches is available through the county extension offices.

The point I like best in the brochure is this:

- Forget about watering streets, walks, and driveways. They won't grow a thing!

Be bug wary! In June, many of the most serious insect pests begin to take their toll on garden plants. If you own a Spruce or Fir and particularly if you live in the east and southeast parts of Denver, be on the lookout for the devastating Tussock Moth. The problem is sufficiently serious to warrant an area-wide campaign which was conducted in May by the Campfire Girls in cooperation with Trees for Today and Tomorrow and the Colorado State University Extension Service.

The best way to detect Tussock Moth is to stake down a 12' x 12' sheet of white plastic or other durable material beneath the trunk of the tree and check for signs of chewed needles and yellow, sand-like droppings from the caterpillars. Should you find this evidence, the trees should be sprayed immediately. On very large trees, they will need to be sprayed commercially. For smaller trees, call 355-8306 for details on control.

Cankerworms, caterpillars and leaf rollers always seem to be present at this time and are best controlled by using Malathion or Diazinon. With the exception of leaf rollers, Sevin will also control most caterpillars and is a rather safe pesticide to use even in the vegetable garden. The crawler stage of many scale insects is best controlled at this time, again using Malathion or Diazinon. They will be particularly common on Euonymus, Lilac, Dogwood, and Aspen. As with all pesticides, be sure to read the label and follow all directions carefully.

This column will not have space to go into all the other insects you might run into but the county extension offices of Colorado State University will be able to answer any questions you might have in your particular area.

The main thing to keep in mind is that the insect should be identified first, before grabbing the sprayer. Determine whether it is really a problem and that it warrants control. Many insects that appear to be a real problem, turn out to be beneficial; or at least not in sufficient numbers to warrant using pesticide control measures.

Dr. J. R. Feucht

Thank you so much!

The 1975 Plant Sale has gone down in Botanic Gardens history as the greatest yet! To all of you who gave of your time, your energy, your talents, your enthusiasm, your plants — even your financial resources — the Board of Trustees, the Staff, and the Membership of the Denver Botanic Gardens offer warm thanks. Our sincere congratulations to all and especially to Chris McCall, this year's chairman.

Assistant Director Visits Nursery Meetings

During the spring and early summer of 1975 the Denver Botanic Gardens will be planting a wide variety of trees, shrubs and flowers.

To aid in the purchase of these, I flew to Chicago, Illinois, to attend one of the largest nurserymen's buying conventions in the country — the Mid-American Nursery Conference. This was held at the Arlington Park Exposition Center in Arlington Park, Illinois. At this meeting were over 200 exhibits from all over the United States, Canada and Puerto Rico. The exhibits ranged from actual nursery stock (trees, shrubs, perennials, etc.) to nursery supplies and equipment. Also, there were many novelty items for the retail garden center. More than 3,000 nurserymen, landscapers and garden center personnel attended this meeting.

There were business and education sessions at this convention, but the main purpose was to buy and sell nursery stock on a wholesale basis. This was the primary purpose for my trip. Over \$11,000 in trees and shrubs and evergreens were purchased for our planting this spring. Much of this plant material was personally selected in the growing fields of several nurseries in the area. This insures a better quality plant than one that is ordered by mail or phone.

After my return from Illinois, the Rocky Mountain Regional Turfgrass Conference was held at Fort Collins the following week. This was a two-day educational meeting. Many new ideas concerning turfgrass culture were presented.

Some of the items mentioned were the use of a new growth retardant for lawn grasses, proper timing of fertilizers to conserve on water use, varieties of grass more suited to drought or dry conditions and motivation of employees.

These and other ideas gleaned from the various speakers will be put into practice here at Denver Botanic Gardens.

Right on the heels of this conference was the Colorado Nursery & Shade Tree Conference at the Regency Inn in Denver. At this meeting were 22 exhibitors and several hundred nurserymen and tree experts from several western states. This was a very fine educational meeting, particularly for myself, since I am a recent transplant to this area from Illinois (one of the wet states). One of the most exciting sessions (at least for myself) was the one on "Drip Irrigation." I feel that this is really an important concept in a dry climate such as occurs here along the front range. The essential idea is to apply water slowly to the soil in amounts that can be used up by the plant each day and not to water adjacent areas. This system was pioneered in Israel and now used extensively in California. It is a very good water conservation system. We hope to have a homeowner type system installed for public inspection this summer.

I met a few of the Colorado nurserymen at this meeting and am looking forward to getting acquainted with more of them.

All in all, it was a very busy two and one-half weeks which was spiced with moving all the household goods from our home in Illinois.

Some very interesting ideas have been formed by these meetings and we hope to implement some of these in the coming months so that any of the interested public will gain some benefit also. Please visit the Gardens in late June and see our progress and possibly pick up some ideas of your own.

Glenn Park
Assistant Director

AND ANOTHER WELL TRAVELED STAFF MEMBER

Solange Huggins, librarian, Helen Fowler Library, has attended an Interlibrary Loan Workshop in Aspen and a meeting of the Council on Botanical and Horticultural Libraries hosted by the Missouri Botanical Garden in St. Louis.



Something New at the Gardens

Since there is so much interest in vegetable gardening, a new area has been developed showing how to grow a wide range of vegetables and to try the latest introductions in the Denver area. This will give valuable information to the home owner and apartment dweller at a time when they are looking for ways to cut food expenses by growing their own vegetables.

The area may be found to the west of the Outdoor Gardener's workshop adjacent to the workshop patio west of the Conservatory.

Railroad ties have been used as retaining walls to add interest to this area for we think building this garden at several different levels will give a pleasing effect. Also, a few container grown vegetables will be placed at various spots in the garden.

One other item of note — there will need to be a fence around this area to prevent animals (two and four legged) from marauding the garden. A decorative four foot high fence will keep out all but the most determined ones. A pathway composed of some sort of mulch material (bark chunks, gravel, wood chips, etc.) will also add a distinctive touch to the area.

As a further refinement, the new drip irrigation method, which has been widely acclaimed as a water saving device, will be demonstrated here.

One of the reasons for this type of project is to fill an early recognized need. In *Colorado As An Agricultural State* published in 1883, the statement is made:

"Agriculture in Colorado is an entirely different pursuit from what it is in the Eastern States, and the farmer who comes to the State and enters upon the cultivation of the soil in the style he has been accustomed to, will find that failure is more likely to result from his labors than success. He has much to unlearn."

Look at our plot the next time you are visiting the Gardens. Also go to the Gift Shop where for 50 cents you may buy George Kelly's book "*Good Gardens with Less Water in Colorado*."

* * * *

The season for travel is here. For those of you fortunate enough to be planning a trip to Europe the film on June 21 is a must. "European Gardens" will only take 20 minutes of your time but will help prepare you for some of the beauty spots you may visit. Plan to view this at 1:30 p.m. June 21, Classroom C. Free.

JUNE, 1975

[illegible]

CALENDAR OF EVENTS FOR JUNE (Continued)

21)	8:00 a.m.	Red Rocks Park	"Cacti" Field Trip
21)		Education Building – Horticulture Hall	Denver Bonsai Club – Show & Exhibition OPEN TO PUBLIC – 10:00 a.m. – 5:00 p.m.
22)		Education Building – Horticulture Hall	Denver Bonsai Club – Show & Exhibition OPEN TO PUBLIC – 10:00 a.m. – 5:00 p.m.
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24)	8:00 a.m.	Cheesman Park	Tree Walk – Mr. Ken Hostetler
24)	7:30 p.m.	Education Building – Lecture Room "C"	Gladiolus Society Meeting
25)*	11:00 a.m.	Botanic Gardens House – Main- Dining & Kitchen	Sunbonnet Garden Club
25)*	7:00 p.m.	Education Building – Lecture Room "B"	House Plant Class – Mr. Dave Woodward
25)	7:30 p.m.	Education Building – Lecture Room "C"	Colorado Open Space Council (Wilderness Workshop)
26)	7:00 a.m.	Botanic Gardens House – Parking Lot	Field Trip to Mt. Goliath
26)	7:30 p.m.	Education Building – Lecture Room "A"	Capitol Hill United Neighborhood
26)	7:30 p.m.	Botanic Gardens House – Main- Dining & Kitchen	Men's Garden Club of Denver
♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦			
JULY			
1)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
1)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
1)	7:30 p.m.	Botanic Gardens House – Dining Room	Denver Audubon Society (Wildlife Workshop)
3)*	7:30 p.m.	Education Building – Lecture Room "C"	Colorado Open Space Council (Board Meeting)

**For members or enrollees only.*

JUNE CLASSES

Mr. Glenn Park, Assistant Director of the Denver Botanic Gardens, will teach the fundamentals of *Pruning* on June 11 at 9:30 a.m. in Classroom A. Free.

Our next two sessions for those interested in the National Junior Horticulture program will be on June 13 and 20. Both will study the *Summer Characteristics of Woody Plants* and will be taught by Dr. Feucht. Meet at 9:30 a.m. in Classroom A. Free but limited to students under 21 years of age.

Field Trips will continue on the third Wednesdays of each month throughout the summer. Dr. Brunquist meets those interested at 909 York at 9 a.m. On June 18 plan to join us. Free and all welcome.

Many different plant families in different parts of the world have developed special features of desert dwelling plants. Some of these adaptations such as thick leafless stems covered with waxy coatings and armed with spines are devices which seem typical of cacti. Therefore, a casual layman would probably be confused. Come on Friday, June 20th, to Classroom C at 9 a.m. and learn the features of *Cactaceae*. All welcome. On June 21, the first 20 people to sign up may study *cacti* in the field. They will meet in the Red Rocks Park at the Trading Post at 8 a.m. Free but please sign up after June 9.

Another morning walk is scheduled on Tuesday, June 24. At this time we will *Identify Trees* and look for evidence of insect damage and disease. Meet at 8 a.m. at the Greek Temple at Cheesman Park. Free.

Finally, the first *Field Trip* to *Mt. Goliath* will be a work day to help replace labels and signs. Of course it will also provide a fine opportunity to see early alpine flowers. Meet at 7 a.m. at 909 York or at 9 a.m. at Echo Lake Lodge on June 26. Free, bring lunch, limit 20. Please, no sign ups until June 12.

Special Treat

Mr. Campbell Robertson whose work on trees was mentioned in the last newsletter, will lead a *Tree Walk* in Boulder on June 7! Meet at 9 a.m. at 12th and Baseline. Free and all welcome.

* * * * *

Information has been received about the summer offerings of the Rocky Mountain Nature Association.

Rocky Mountain National Park presents an ideal outdoor laboratory in a natural environment for study of geological processes and products, animals, plants and their ecosystems. Recognizing this fine opportunity, seminars in ecology, geology and related fields have been given in the Park for the past thirteen summers. The major portion of the day is spent observing in this "living museum" and then shorter indoor sessions follow each day's field activities. Distinguished ecologists may present evening lectures to complement the daytime work.

The classes to be offered are: *Developing Awareness through Drawing*, Mr. Herb Thomson; *Rocky Mountain Ecosystems*, Dr. Richard G. Beidleman; *Bird Ecology*, Dr. Gustav A. Swanson; *Wildlife Management*, Dr. Douglas L. Gilbert; *Plant Identification*, Dr. Miriam L. Denham; *Alpine Ecology*, Dr. John L. Marr; *Mountain Geology*, Dr. Robert B. Johnson; and *Advanced Mountain Geology*, Dr. Robert B. Johnson. For further information on fees, registration and college credit, please write:

Seminar Coordinator
Rocky Mountain Nature Association, Inc.
Rocky Mountain National Park
Estes Park, Colorado 80517

Thorne Ecological Institute has announced its Ninth National Seminar on Environmental Arts and Sciences, June 22 to 26 in Aspen. This year thirty-five leaders in industry, business, education, government and labor will explore "Harmonizing Socio/Economic Needs and Environmental Imperatives."

For further information please contact:

Patricia L. Jensen, Seminar Coordinator
Thorne Ecological Institute
2336 Pearl Street
Boulder, Colorado 80302

WILDFLOWER PICTURES !

"Colorado's Wonderland of Flowers" will be presented on June 12 at 7:30 p.m. in Horticulture Hall.

This one hour program was produced by Lucian Long using a two screen, four projector system with sound which he has assembled for the purpose. Two tape recorders with separate dissolve units permit continuous showing of over 600 rare slides from several parts of the world. Many of these slides were taken by the late Dr. John C. Long of Denver during the last 35 years. Special emphasis is focused on groups of Colorado wild flowers in the ecological zones and the effect of glaciers in establishing such zones.

Long is an accomplished photographer and has had extensive experience in program production with several Denver radio stations. During the past five years he has constructed a native garden in Monument Valley Park as a project of the Horticultural Arts Society of Colorado Springs.

Come see these lovely pictures which will be presented free for members. Please show your card at the door; all others please pay \$2.00 for admittance.



"Can Spring Be Far Behind?"

By Luella Deam

The Colorado Watercolor Society will have the opening of its annual all water media exhibit at the Denver Botanic Gardens, 1005 York Street, on Thursday, June 5. The show will be on view in the Horticultural Hall daily from 10 a.m. to 4 p.m. and will close on Thursday, June 19. There is no admission fee.

Robert Strohmeier, professor of art at the Metropolitan State College, will be the juror for the show.

Paintings in the exhibit are for sale and approximately sixty-five paintings will be on display. All members in the Colorado Watercolor Society are actively engaged in painting and in promoting contemporary art techniques.

This organization has been in existence for twenty-one years and this is the fourth year that the group has been invited to display its annual all water media show at the Denver Botanic Gardens.

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Help please!

Knowledgeable volunteers are needed to serve as "Dr. Green." This feature of the Gardens has been very popular with the public (so much so that the staff has been swamped).

Questions are fielded by phone and in person and range all over the plant world — house plants, ornamentals, vegetables and lawns.

If you can't answer every one, don't worry. All staff members have been stumped too, necessitating a visit to the Library and a return call to the questioner.

The hours of the service are 1 to 3 p.m. every Tuesday and Thursday but of course we would appreciate any time you might spare. If you can help please call Glenn Park, 297-2547, ext. 4.

* * * * *

The Denver Bonsai Club will present its annual exhibition of trees in miniature at the Denver Botanic Gardens, Saturday and Sunday, June 21 and 22, from 10 a.m. to 5 p.m. daily.

Over 100 trees ranging in age from several months to 300 years old will be on display at this popular show, with demonstrations to be presented each day.

The public is cordially invited to attend.

Mark Your Calendar!

A reception will be held on July 7 at 7 p.m. at 909 York in honor of Cythna Letty Forssman. Mrs. Forssman, who has recently retired from the University of Pretoria, South Africa, is a well known plant illustrator. Exhibits of her work have been shown in Capetown, Johannesburg and London.

Examples of her art will be on display at the event. All interested people are urged to come and meet this distinguished botanical artist.

The Tour Guides Committee of the Associates has announced the summer schedule of tours. Guided tours will be provided for fourth grade and up and for adult groups at 10 a.m. on Tuesdays and Thursdays in July and August. This service of the guides is always popular so tours must be booked ahead of time.

Our thanks go to Ellen Waterman who has scheduled the guides for this past academic year. It is a big job (692 tours in all) and has been handled in a most pleasant and efficient manner. Bev Hanselman has accepted this assignment starting in summer and all are looking forward to helping her with this important aspect of the Associates program.

Denver Rose Society Show

The Denver Rose Society will present its Annual Show on June 22 at the Colorado National Bank. The hours are 1 to 5 p.m. and many beautiful blooms and arrangements will be displayed. Experts will be on hand to help answer questions and as a special feature, people will be asked to identify plants. The first 50 winners will be awarded miniature roses as prizes. All welcome.

This spring over 400 rose bushes were planted in three areas of the rose display garden which is located in the center portion of the garden. You will see such old favorites as 'Queen Elizabeth' and 'Peace' along with quite recent introductions 'Perfume Delight,' 'Medallion' and 'Arizona.' Many other All-America Rose Selection varieties are also presented: 'Chrysler Imperial,' 'Lowell Thomas,' 'Tropicana,' 'Command Performance,' 'Camelot' and 'Granada.' The pinks have it with 'Show Girl,' 'Katherine T. Marshall,' 'Pink Peace' and novel 'Candy Stripe.' Blends include 'Ann Letts,' 'Chicago Peace' and 'Sunrise-Sunset.'



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Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR JULY

July is a month when a lot of people are on a vacation but the yard still must be taken care of and if you are going to be away for more than a week, the following tips will help to insure that your yard will be in reasonably good order when you return.

It is surprising how a few weeks of neglect will turn your yard into a ragged ruin that will require many hours of hard work to return it to its original beauty.

Another good reason for keeping your yard in good maintenance while you are away is for the protection of your home and contents. A neglected yard is an open "advertisement" to prowlers that the house is vacant.

Mowing, general weeding of the flower beds, and watering can be entrusted to the "kid next door" if he is properly instructed before your departure.

If spraying for pests is necessary during your absence, make arrangements with a reputable arborist or landscape maintenance firm. Many have found it more economical in the long run, and can put their minds more at ease by hiring a commercial maintenance firm to do all yard maintenance during their absence.

If you do hire the neighbor boy, use the following as a guide in giving him instructions:

1. If he is to use your lawn mower be sure that he is instructed on how it operates. If the mower is of the 2-cycle type requiring a gasoline-oil mixture, make sure he knows how to make the mix or supply him with an adequate quantity of the fuel.

2. If he uses his own lawn mower, make sure that it is set for the proper height of cut.

3. Mark or point out all hazards in the lawn area that would be damaging to the mower such as sprinkler heads, faucets and water meters that protrude above ground.

4. If you have him water your lawn and flower beds, suggest to him the best system for setting the sprinklers to give good coverage and indicate the length of time each sprinkler should be set in one spot.

5. If you are away more than two weeks you will need to instruct the boy on pulling weeds from the flower beds. It is always safest to clearly mark any of your flowering plants that might be mistaken for weeds.

6. Always make arrangements with an adult neighbor that the boy may contact, should he run into serious trouble.

Bugs in the Vegetable Garden

At this time of year insects can be devastating to all garden plants but are probably the most noticeable in vegetables. If you have beets, chard, or spinach, you might be experiencing damage to the foliage from the leaf miner. This is caused by the larva of a small fly that burrows between the upper and lower surfaces of the leaf and certainly does not make the foliage desirable to eat. The leaf miner has several life cycles a year so it requires frequent control. The best control available is malathion applied at weekly intervals or Diazinon applied about every 14 days. In both cases be sure to check the label for the waiting period required following spraying before eating the tops.

The tomato hornworm will begin its activity this month, although it is not noticed until August. If you do not wish to use pesticides, the worms can be picked off as they are found. It takes good eyes to find them. If a sufficient number are missed to cause damage, spray with Sevin applied every two weeks will usually keep them in check. On tomatoes, Sevin has only a one day waiting period. After that the tomatoes are safe to eat. Sevin is also an excellent material to use for the control of Cabbage worm and other caterpillar-types of insects. It does, however, require a longer waiting period before eating the crop when used on vegetables other than tomatoes. Again, be sure to check the label and follow directions carefully.

Slug Control

Slugs got an early start this year because of the cool, moist weather in late May and early June. Because slugs like cool, moist conditions, one of the best ways to control them is allowing the soils to dry out a little bit between waterings. Slugs also do not like to crawl across rough soil. If the soil is kept cultivated and a bit on the dry side you do not have as much trouble with this pest.

A few years ago, a USDA scientist discovered that beer attracts slugs. A little bit of beer in a coffee can plunged into the ground so that the rim is level with the surface of the soil will help trap them. Select a shaded area where the soil is apt to remain damp for a longer period of time in order to have the most satisfactory results.

The common preparation for control of slugs is metaldehyde. This product comes in pellet form and gives good control but it is usually very short-term. Because this chemical is quite toxic to pests, it should be placed where dogs and cats cannot get to it. One trick is to put some pellets in tin cans which have had both ends removed. Place the cans on their sides beneath shrubs or other places where they would not be too accessible to pets.

In last month's gardening tips, we spent a lot of time talking about wise watering. Despite the fact that the reservoirs are full and we have had a sufficient amount of snow since then to insure a good supply of water this year, I hope you will follow the advice in the publication by the Denver Water Board, particularly now that we are in the hot, dry season. This time of year there is a lot of water wasted because there is a tendency to water every time the soil is dry on top. Before watering, dig down a few inches to see what the supply is like. After all, that's where the roots are. This will help to control those pesky slugs.

Come Admire the Daylilies

Since the Denver Botanic Gardens started its Hemerocallis Garden three years ago, 350 cultivars have been donated to the collection. Of this group, only 11 duplicates have been received. Members of the Society added 21 new varieties this spring and additional prize winning plants are expected soon. The first daylily bloomed on May 19 this year, but generally the height of the season is July and August. Colors range from near white to dark red with all shades in between.

Our thanks to George Paul Watts, Past President of the American Hemerocallis Society, Harry Kuesel, Miss Edna Lankart, Jack Riley, and Gilbert Wild and Son.

JULY CLASSES

Are you busy on July 9th? If not, now is a great time to visit Mt. Goliath for spring is just beginning at this altitude. The whole trip including a 1-1/2 mile walk on the M. Walter Pesman Trail can be done in 6 hours. Meet the group at 7 a.m. at 909 York or 9 a.m. at Echo Lake Lodge. Sign ups after June 27, please. Limited to the first 20 names. Remember to take Susie Ash's *Mt. Goliath Guide*, available in the Gift Shop, for important information on the area and its flora.

Annuals will be discussed on Tuesday, July 15 at 9 a.m., Classroom A, by Glenn Park. This is offered as part of the National Junior Horticulture Program and is open to any interested students under 21 years of age.

Dr. Brunquist will lead his *Field Trip on Plant Identification* on July 16. Meet at 909 York at 9 a.m. Free. Please share gasoline expenses and carry a lunch.



Advance notice has been received about a lecture by Dr. Alexander Smith, the eminent mycologist. This is planned for August 4 in the evening. More information in next newsletter.

* * * * *

THANK YOU for helping us to do it again! Each of you and your friends who sent in books for this year's Used Book Sale can take a share in the satisfaction we feel at being able to add just over \$2500 to the Helen Fowler Library's budget for May 75-May 76 for new books! This is an increase of about 45% over our last year's figure, but we're just several steps ahead of inflation. We're already collecting for next year's sale so please do remember to send us your unwanted books, magazines, art prints, phonograph records of all speeds, old postcards, and ask your friends and neighbors to do the same.

Now some bad news — the only general encyclopedia in the Library reference section is the 1966 Americana. We discovered several weeks ago that volumes 10, 16 and 20 have been "borrowed". We keep hoping they will be put in the bookdrop at the Gate, but so far no luck. We covet the new Britannica, but the Booksale funds, and the monthly contribution the Library receives from the Associates of the Denver Botanic Gardens are designated for the purchase of new acquisitions, not replacement of lost or stolen works. Is there a generous soul among you who would like to update our now incomplete reference encyclopedia?

* * * * *



The trip to *St. Mary's Glacier* will provide another opportunity to view high altitude plants. Often we see over 50 species, including some rare beauties, at this spot. Join us on July 19, 7 a.m. at 909 York or 8 a.m. on Exit 48 on I-70. No sign ups before July 7, please. Also remember if you are not one of the first 20 on the list, put your name on the waiting list. If any of those accepted cannot attend, and if they notify us of that fact, we will call you.

Our July film will fit in nicely with our scheduled trips to Mt. Goliath and to St. Mary's Glacier. "Above the Timberline" will be shown on July 12 at 1:30 p.m., Classroom C. Free.

Finally, all welcome to *Identification of Common Mushrooms*. This class is set for Saturday, July 26, 9:30 a.m. Classroom C. Free.

And from *Spores Afield*:

A mushroom is a vegi-table
To detect if you are able.
You can't tell them when you meet them;
You can tell them when you eat them!
If in heaven you awaken,
Then you know you were mistaken
And the mushroom you have eaten
Ain't the one you should have et!

A new display on Mineral Water Gardening has been arranged on the steps going up to the sun deck at 1005 York Street. Mr. Norton Novitt, hydroponicist, is growing appropriate tomatoes in units which are suitable for indoor or outdoor use, window sill or patio. Labels explaining this process are posted next to the units and further information is available in the Helen Fowler Library.

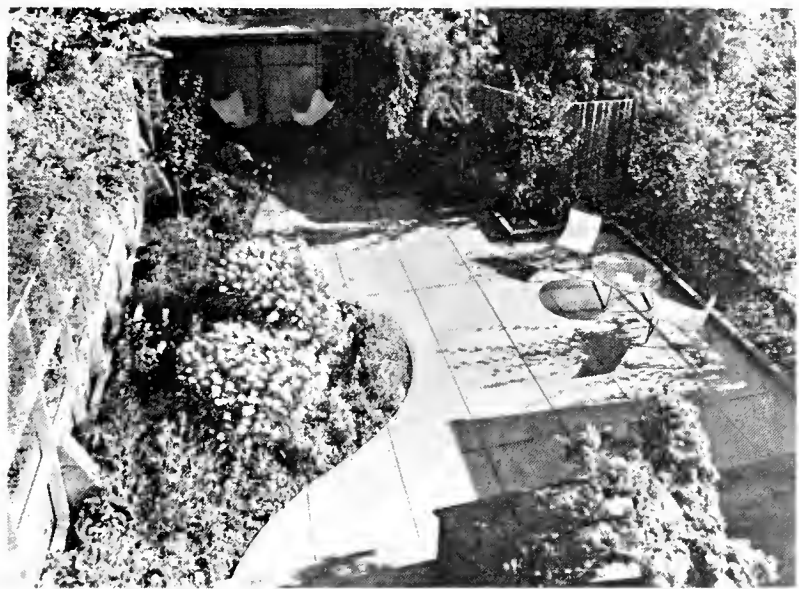
1975 GARDEN TOUR

The 1975 Garden Tour will be held July 23rd from 10:00 a.m. until 6:00 p.m. The gardens chosen are:

- 1) Mr. and Mrs. William B. Collister, 6320 E. Fourth Ave.
- 2) Mr. and Mrs. Joe Miller, 125 Jasmine St.
- 3) Miss Charlotte O'Malley, 322 Grape St.
- 4) Mr. and Mrs. W. Coles Hudgins, 4949 Sixth Ave.
- 5) The Childrens' Garden, Mrs. Irene Vittetoe,
Instructor, Denver Botanic Gardens
- 6) Mr. and Mrs. George P. Caulkins, Jr., 435 Westwood
Drive
- 7) Mr. and Mrs. Philip R. Moore, 350 Franklin St.
- 8) Mr. Jim Mills, Mr. Dale Mathis, 145 Lafayette St.
- 9) Mr. and Mrs. John A. Moore, 315 Marion St.

The price of the tickets will be a Five Dollar Donation to the Denver Botanic Gardens (Tax Deductible). Tickets may be purchased at the Gift Shop, from any Botanic Gardens Guild member, or at any garden on the day of the tour.

Among the features of interest in the gardens chosen this year are a large swimming pool in a casual setting, plants grown in color-coordinated schemes, modern sculpture, large play areas segregated with shrubbery and flowers, terraces which are brick enclosed and used as outside greenhouses in the summer, and a latticed arbor filtering sun over tuberous begonias.



One of the stops on the Garden & Terrace Tour will be the Children's Garden. This is always an interesting (and sometimes humbling) place to visit, for the children do a beautiful job and generally their plants are in better condition than our own. They do work across the street and it shows! A poem by one of last year's gardeners expressed her feelings nicely:

"While hoeing and thinning and weeding,
There is something I always am needing.
As the old sun gets hotter and hotter,
A nice long cold drink of water."

As one of the Denver Botanic Gardens' projects for the Centennial-Bi-Centennial, we have developed a garden in the Walnut Hill area. This is a Children's Garden located to the north of Barrett School at 29th and Jackson. This venture, a cooperative project of the Denver Public Schools and the Botanic Gardens, incorporates a large area of land, 64 by 509 feet, but is not all under cultivation this year. Thirty-five 3rd, 4th and 5th graders from Barrett and Columbine Schools are busily hoeing and growing. Mrs. Irene Vittetoe is the Supervisor and reports she is having as much fun as the children! Drive past and see this garden.

MOUNTAIN SPLENDOR

Colorado Hosts 1975 A.D.S. Show

A tall hello to all dahlia enthusiasts from the mile high state of Colorado. Denver will be the site of the 61st A.D.S. National show to be held August 28th - 31st, 1975. With several planning meetings behind us we are getting ready to give you our biggest welcome.

The theme for the 1975 show is "Mountain Splendor." Registration will start on Thursday, August 28th with a planned tour on Friday. Judging of Dahlia Show on Saturday, with a banquet Saturday evening. Sunday will schedule important meetings of interest to dahlia growers.

The dahlias will be exhibited at the newly planted Denver Botanic Gardens with one of the finest exhibition halls in our nation. The headquarters for this National meeting will be the Cosmopolitan Hotel in downtown Denver.

FOR MEN ONLY

Do you know about the Men's Garden Clubs of America? They have approximately 9,000 members around the country in 250 clubs. Twelve local clubs are in the Rocky Mountain region with several in the Denver area including the Denver Men's Garden Club which meets at the Denver Botanic Gardens.

Benefits of Membership include a bi-monthly magazine "The Gardener" which has many articles of interest. MGCA also has a seed exchange program, plant study program, information bulletin service, accredited judging school program, award programs, and National Big Pumpkin contest (this year's national winner was from Briggsdale and weighed 201-1/2 lbs!).

If you would like further information about the many interesting services of the Men's Garden Clubs of America, please write to:

Mr. Fred L. Goldsby, National Director
MGCA - Rocky Mountain Region
1185 Tari Lane
Colorado Springs, Colo. 80908

Oh, and P.S. Ladies are always welcome as guests.

FORESTERS SEEK HISTORIC TREES

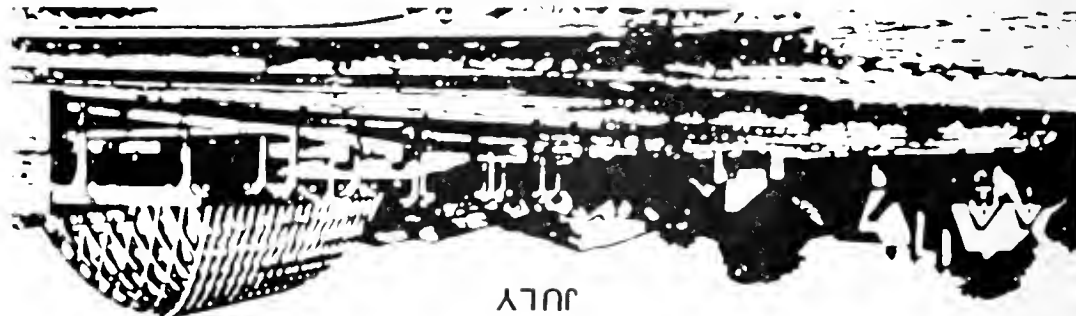
The Colorado State Forest Service, in observance of this country's 200th birthday, is looking for trees of historical significance. This is being done in cooperation with the American Forestry Association, which will publish a book on historic and famous trees in the United States.

Trees to be considered for inclusion in the book, according to Ken Hostetler, District Forester, will fall into these categories: (1) trees associated with notable people or with the development of the nation, (2) trees connected with educational institutions, churches, or other cultural life of the states, (3) trees associated with forestry or early conservation efforts, and (4) trees historic or famous because of unusual size or age.

Persons wishing to nominate trees in any of these categories, Hostetler said, may secure nomination blanks from State Forest Service district office, 909 York Street, Denver, Colorado 80206.

* * * * *

Despite 4 inches of snow on May 29, the Bonus Plant Give-Away was very successful. Volunteers did their usual fine job of coping with the unexpected, people were most appreciative and many plants got a fine new home.

DENVER BOTANIC GARDENS, INC.
909 YORK STREET • DENVER, COLORADO 80206

JULY

Eastern White Pine*Pinus strobus*

While not entirely adapted to all Colorado soils, the Eastern White Pine seems to thrive in certain parts of Denver, particularly "older cultivated soils", but it will not survive in the outlying areas where the drainage is poor and soils are heavy. This pine is a five-needled species and is distinctively unlike some of the more common three-needled pines. It probably has the most slender needles of all, giving the tree a very soft appearance as well as feel.

The tree shown in the picture is typical of the very interesting silhouette which makes it highly valued for both shade and as an ornamental tree. The older trees showing a most picturesque growth habit can be seen in many parts of our city. Some of the best specimens are located just off Speer Boulevard and Marion Streets. A few excellent trees are scattered in Washington Park and along Monaco Parkway. This particular picture was taken along Monaco Parkway.

Before planting this tree, you should check the soils to make sure there is good drainage. It will not thrive in a high-alkaline soil.

Dr. J. R. Feucht**Oh, My Aching Back!**

Volunteers were called on again the first week of June when 26,000 annuals had to be planted. All sorts of colorful blossoms can be expected this summer as flowers and leaves of every hue are represented in the outdoor beds. Look for such beauties as *Amaranthus* 'Tricolor Splendors Perfecta'; Basil 'Dark Opal'; *Celosia* 'Rose Empress'; *Dahlia* 'Border Jewels'; Flowering Kale 'Red on Green'; *Gomphrena* 'Buddy'; *Heliotrope* 'Marine'; *Impatiens* 'Orange Gem'; and so on, throughout the letters of the alphabet ending with *Zinnia* 'Royal Purple'.

Something Nice To Anticipate!

A visiting celebrity, Cythna Letty Forssman of South Africa, will be honored at a reception on July 7 at 7 p.m., 909 York Street. Mrs. Forssman is a well known artist and has done many beautiful illustrations of the wild flowers of the Transvaal. She has recently been awarded an honorary LLD from the University of Witwatersrand in recognition of her outstanding achievements. Examples of her art will be on display at the House. All interested people are most cordially invited.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



Gardening Tips for August

We have talked about water the last two months, particularly water conservation, and in this hot weather, it may seem impossible to cut back on watering, but the month of August is a good time to begin tapering off on water for trees and shrubs. Not of course to the extent that plants suffer but just enough to begin to help them harden off for winter. This is good insurance against the unpredictable fall weather that we might have. The past few falls have been long and extensive without any sudden temperature changes but those who have lived here very long, at least since 1969 will remember that year and also 1971 when summer went to winter rather quickly and the plants were not ready for it. Gradually reducing water on trees and shrubs helps to slow the plants down and get them ready for winter.

Some plants will get ready for winter no matter what. Oaks and Lindens will start getting ready for winter in July. This is because they are regulated by day-length rather than by weather conditions. Trees such as walnut, soft maple, green ash and goldenrain tree and several others that tend to put out a strong second flush of growth need a gradual withdrawal of water to help "tell them to get ready for winter." It would probably also be a good idea to withhold high-nitrogen fertilizers on such trees and shrubs.

The question is usually asked, "How do I know when a plant has hardened off"? The easiest way is to look for sign of woodiness in the most recent growth. You will notice a change in color from a green to olive or brown. You can also look at the buds. Plants that are getting ready for winter will have set buds at the base of each leaf and at the tips of the branchlets.

Insects in the Garden

Even though we are thirty days behind schedule in insect activity, recent hot weather seems to have made everything catch up all at once. Now is a good time to look for the tomato hornworm which may already be chewing away at your plants. It is usually first evidenced by chewed foliage and the appearance of black droppings. Sevin does a good job of control, or they can be picked off by hand. If you are squeamish about doing this, you might have your sons or daughters, or the boys or girls next door perform this task for you. Most kids don't mind handling such creatures.

Tomatoes and potatoes are also afflicted by another insect known as a psyllid. The adult and the nymph stages of the psyllid cause damage by sucking our plant juices, leading to a condition known as "psyllid yellows." This usually causes a stunting or distortion of the plant with little or no fruit set. In a slow year like one when tomatoes have been difficult to set anyway, it would be a good idea to control or prevent this particular pest. Malathion does a good job.

Caution on Pesticides

Already this year we have had some of the typical calls regarding the use of pesticides, or I should better say "misuse", leading to some rather unfortunate and avoidable mistakes. A very common occurrence is the application of a

pesticide to edible crops such as vegetables and fruits, only to read the label afterwards and find that they cannot be used for that purpose. One of the biggest offenders on the market is Isotox. The formula of this pesticide has been changed and it now contains a systemic, making it unsuitable for use on edible crops. A warning given in the past bears repeating. **ALWAYS READ AND FOLLOW THE DIRECTIONS GIVEN ON THE LABEL EACH TIME A PESTICIDE IS USED.**

Another common problem encountered is the misunderstanding on the so-called "waiting period" on edible crops after pesticides have been used. Because the waiting period of Sevin is only one day on tomatoes does not mean it is just the same on other vegetables. Sevin used on cauliflower or head lettuce will require a three-day waiting period. The law requires that the label carry clearly printed instructions on each container of pesticide. **ALWAYS READ THAT LABEL!**

Spidermites

Hot weather always brings out an increase in spidermite activity. Unfortunately, the damage is often done before the mites themselves, which are rather small in size can be detected. Make it a practice to check your plants by holding a sheet of white paper beneath the branch and shake it vigorously. The presence of mites will be indicated by little, tiny "dots" appearing on the paper. Kelthane and similar insecticides will bring them under control. If you have been using a lot of Sevin, Mythoxychlor, or Chlordane without combining them with a miticide, you will probably be experiencing a build-up of spider mites. This is because these products have little effect on spidermites and they kill off natural predators. Therefore, if you wish to control the mites, it is generally a good idea to combine a miticide with the proper insecticide. Sometimes these combinations are available already mixed for you.

If you wish to control mites without using chemicals, some satisfaction can be gained by the use of a forceful spray of water at frequent intervals. Just be sure that you avoid over-watering the trees when you use this method. This could lead to other problems.

Dr. J. R. Feucht

VOLUNTEERS NEEDED

One of the many useful services provided by The Associates is responsibility for the Hospitality Desk which is set up in the lobby every day and to which hundreds of visitors head, once inside the door.

Volunteers are being sought for the remainder of the summer and into the fall. You will be rewarded in many ways; talking with people from many parts of our own country, as well as a large number of visitors from abroad; learning a lot from their questions, as well as supplying some answers; and most important of all — contributing to the smooth operation of the Gardens.

If you can spare a few hours each month on a regular basis, won't you call Mary Lou Falion (688-9274) who will be glad to give you more details, or the Denver Botanic Gardens (297-2547 Ext. 23).

Members will remember that in the spring of this year a questionnaire was circulated which concerned library usage.

The graduate student who devised the questionnaire asked "What are the user's values, attitude and perceptions about the library, its staff and services? Are the Denver Botanic members receiving the greatest benefit from present library facilities and resources?"

Although only 10% of the membership responded, the results have been tabulated and since they are of general interest, we are choosing this method of sharing them.

Briefly summarized, the age group that uses the library most frequently is over 50 years old. The highest usage by occupation shows homemakers (30.6%) followed by professional people (18.5%) and retired (12.5%).

"Did the fact that you would be able to borrow books . . . have any influence on your decision to become a member?" No (52.9%), Yes (47.1%).

"If you needed a book on plants . . ., would you be more likely to borrow from D.B.G., public library or other library?" Prefer to use D.B.G. (80%), public library (14.8%), and other (4.3%).

"How would members feel if non-members had borrowing privilege?" Unfair to members (58.2%), wouldn't mind (37.9%), not sure (3.8%).

(Many qualified this question by suggesting non-members pay a small fee for borrowing books. A few members commented that if this policy were adopted they would not renew their membership.)

Most respondents made very favorable comments about the library and its service. One hundred seventy-six people said "yes" when asked if they felt comfortable asking one of the library staff for help and 59.6% said they received satisfactory answers "all of the time" to reference questions.

Since space was provided for additional comments, some people suggested improvements: a copy machine be installed; books by mail; journals should be circulated; inter-library loan (Editor: This service is available); a longer borrowing period; longer hours especially in the evening; have a smoking section.

The student who drafted the questionnaire and compiled the responses also made some suggestions for consideration by the Library Committee. She suggested the library might consider experimenting with being open one or two nights a week. (Editor: This was tried last year and met with poor response.) Volunteers who generally are used on the Circulation Desk should receive a goodly amount of training in reference tools and become very familiar with the collection in order to provide maximum service to library users. The alternative is to hire an additional professional librarian. New acquisitions (perhaps with brief annotations) could be mentioned in the monthly newsletter. This might increase library usage. (Editor: This is done on an irregular basis as space permits.)

Again, our thanks to all who participated in this survey. The formal tabulation is available in the Helen Fowler Library.

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CALLING ALL OVERDUE BOOKS

We'll welcome back all prodigal books which have overstayed their leave!

A KINDRED THOUGHT

We'll welcome, too, prompt payment of overdue fines and reimbursements for lost books. Both actions will mean more books on the shelves of the Helen Fowler Library.

Everybody benefits.



A beautiful donation has been received by the Denver Botanic Gardens in memory of Mr. George Fukuma. His favorite bonsai, a handsome gnarled juniper, was presented as the start of the Gardens' collection. Mrs. Fukuma reports that Mr. Fukuma collected the tree in the Rocky Mountain area and that it is thought to be between 450 and 500 years old. It is displayed in a polished cedar base and is planted in a black Japanese pot.

This will serve as a living tribute to a fine gentleman.

* * * * *

Did You Know?

The Colorado Cactophiles is an organization of people who are interested in growing cacti and succulents. One of their projects is the cactus garden at Red Rocks Park, located west of the Pueblo and east of the amphitheatre. Originally in City Park, it was moved to its present site in 1965 and formally dedicated in 1969. All of the specimens in the garden are Colorado natives.

The Cactophiles meet in the homes of members on the fourth Sunday of each month. Membership is by invitation. A prospective member must attend two meetings as a visitor before becoming eligible. Anyone interested in learning more about this organization may call the President, Tom Merrick at 421-8013.

GLADIOLUS SOCIETY SHOW

AUGUST 9 AND 10

1005 YORK STREET

The Hobby Greenhouse Owners Association of America is aspiring to form a Colorado chapter. An organization meeting will be held on August 5th at the Community Room of First Federal Savings and Loan Association, 3460 West 38th Avenue at 7:30 p.m.

All interested people, whether owners of greenhouses or not, are invited to attend. If you desire further information, please call Mrs. McNeley, 433-0064.

**DENVER BOTANIC GARDENS
CALENDAR OF EVENTS
AUGUST, 1975**

AUGUST

1) *	1:00 p.m.	Education Building — Horticulture Hall	Denver 4-H Fair — Dress Review Judging
2)	9:30 a.m.	Education Building — Lecture Room "C"	"Canning & Freezing Garden Produce"
			Ms. Jackie Anderson
		♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦	♦ ♦ ♦ ♦
4) *	7:00 a.m.	Botanic Gardens House — Parking Lot	Field Trip to Mt. Goliath
			Instructors: Mrs. Susie Ash & Mrs. Marjorie Shepherd
4)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society
			Lecture by: Dr. Alexander Smith
5)	9:00 a.m.	Education Building — Horticulture Hall	Denver 4-H Fair & Exhibits
5)	10:00 a.m.	Education Building — Lecture Room "C"	Slide Show
5) *	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
5)	7:30 p.m.	Education Building — Lecture Room "C"	Denver Audubon Society
6) *	8:30 a.m.	Botanic Gardens House — Main - Dining & Kitchen	D.B.G. Guild — (Vinegar Day)
6)	9:00 a.m.	Education Building — Horticulture Hall	Denver 4-H Fair & Exhibits
7) *	8:30 a.m.	Botanic Gardens House — Main - Dining & Kitchen	D.B.G. Guild — (Vinegar Day)
7)	9:00 a.m.	Education Building — Horticulture Hall	Denver 4-H Fair & Exhibits
7)	10:00 a.m.	Education Building — Lecture Room "C"	Slide Show
7) *	7:30 p.m.	Education Building — Lecture Room "C"	Colorado Open Space Council (Board Meeting)
8)	7:30 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Denver Dahlia Society
9)	9:00 a.m.	Education Building — Horticulture Hall	Gladiolus Society Show & Sale
			OPEN TO PUBLIC: 1:00 - 5:00 p.m.
9)	10:00 a.m.	Education Building — Lecture Room "B"	Colorado Organic Growers & Marketers Assn.
9)	1:30 p.m.	Education Building — Lecture Room "C"	Film Series — "New Gardens of Japan"
10)	9:00 a.m.	Education Building — Horticulture Hall	Gladiolus Society Show & Sale
			OPEN TO PUBLIC: 10:00 a.m. - 4:00 p.m.
		♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦	♦ ♦ ♦ ♦
11)	7:30 p.m.	Botanic Gardens House — Main Room	Sierra Club — (Wildlife Workshop)
12)	10:00 a.m.	Education Building — Lecture Room "C"	Slide Show
12) *	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee
13) *	8:00 a.m.	Meet at 1420 Trenton Street	Plants of the City — (Limit: 20)
			Instructor: Miss Exie White
13) *	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
14)	10:00 a.m.	Education Building — Lecture Room "C"	Slide Show
14) *	3:30 p.m.	Botanic Gardens House — Dining Room	Development & Public Relations Meeting
14)	8:00 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Denver Rose Society
15)	7:30 p.m.	Education Building — Herbarium	Denver Botany Club
16) *	7:00 a.m.	Botanic Gardens House — Parking Lot	Field Trip to Florissant Fossil Beds National Monument
			Instructor: Mr. Hank Kanski (Limit: 20)
16)	10:00 a.m. — 5:00 p.m.		Photographer's Day
		♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦	♦ ♦ ♦ ♦
18) *	9:00 a.m.	Education Building — Lecture Room "B"	Techniques of Collecting and Drying Flowers in Silica Gel
			Instructor: Mrs. Avalonne Kosanke (Limit: 18)

CALENDAR OF EVENTS FOR AUGUST (Continued)

18) *	Noon	Botanic Gardens House – Dining Room	Colorado Garden Show, Inc.
19)	10:00 a.m.	Education Building – Lecture Room “C”	Slide Show
20)	9:00 a.m.	Botanic Gardens House – Parking Lot	PLANT LIFE FIELD TRIP – Dr. E. H. Brunquist
20)	7:30 p.m.	Education Building – Horticulture Hall	Congress Park ad hoc Planning Committee
21)	10:00 a.m.	Education Building – Lecture Room “C”	Slide Show
21)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Gardening Club of Denver
22) *	9:00 a.m.	Education Building – Lecture Room “B”	Techniques of Collecting and Drying Flowers in Silica Gel Instructor: Mrs. Avalonne Kosanke (Limit: 18)
22) *	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
23) *	8:00 a.m.	Education Building – Horticulture Hall	Children’s Garden Fair
		◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆	◆ ◆ ◆ ◆
26)	10:00 a.m.	Education Building – Lecture Room “C”	Slide Show
26)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society
27) *	8:30 a.m.	Botanic Gardens House – Main - Dining & Kitchen	D.B.G. Guild (Vinegar Day)
27)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council (Wilderness Workshop)
28)	8:30 a.m.	Botanic Gardens House – Main - Dining & Kitchen	D.B.G. Guild (Vinegar Day)
28)	10:00 a.m.	Education Building – Lecture Room “C”	Slide Show
28)	7:30 p.m.	Education Building – Lecture Room “A”	Capitol Hill United Neighborhood
28)	7:30 p.m.	Botanic Gardens House – Main - Dining & Kitchen	Men’s Garden Club of Denver
30)	9:00 a.m.	Education Building – Horticulture Hall	Denver Dahlia Society Show OPEN TO PUBLIC: 1:00 - 5:00 p.m.
30) *	All Day	Botanic Gardens House – Main - Dining & Kitchen	Denver Dahlia Society – Breakfast & Luncheon
31)	9:00 a.m.	Education Building – Horticulture Hall	Denver Dahlia Society Show – OPEN TO PUBLIC: 10:00 a.m. - 4:00 p.m.
31) *	10:30 a.m.	Botanic Gardens House – Dining Room	Denver Dahlia Society
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SEPTEMBER			
2) *	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
2) *	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
2)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Audubon Society
4) *	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council - Board Meeting
4)	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society
5) *	11:00 a.m.	Botanic Gardens House – Main - Dining & Kitchen	Civic Garden Club, Inc.
6)	9:30 a.m.	Education Building – Lecture Room “A”	Plant Identification for National Jr. Horticulture
6)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers
6) *	1:00 p.m.	Education Building – Horticulture Hall	Children’s Garden Graduation

**For members or enrollees only.*

August Classes

Canning and Freezing Garden Produce, a free class open to all, will be taught on Saturday, August 2, at 9:30 a.m., Classroom C.

August 4 will be the last scheduled trip to *Mt. Goliath* this season. Meet at 7:00 a.m. at 909 York Street, or at 9:00 a.m. at Echo Lake Lodge. Free but limited to 20 participants, please.

Vegetables will be the next area studied by those interested in the N.J.H.A. program. This will be taught by Gary Neidercorn at the Adams County Fairgrounds near Henderson, Colorado. Take Highway 85 to 120th and turn west across the Platte. Free but limited to students under 21 years of age.

Miss Exie White will lead a walk around Denver on August 13. In this she will point out many of the commonly seen *Plants of the City*, both native and exotic, and discuss some of their interesting characteristics. Meet at 1420 Trenton at 8:00 a.m. Limit 20, no sign ups accepted before July 30, please.

A day long field trip to *Florissant Fossil Beds National Monument* is scheduled for August 16. The naturalist in charge will show us around this world famous area. The group will meet at 7:00 a.m. at 909 York or at 10:00 a.m. at the National Monument Headquarters Building. Take Colorado 24 west from Colorado Springs for 35 miles to the town of Florissant, turn left on the Cripple Creek Road for 2 miles to the Headquarters Building. Bring lunch. Free. Limit 20. No sign ups before July 31, please.

If anyone wishes to learn more, *The New Yorker* magazine of November 13, 1971, had a fascinating article on this area.

Mrs. Robert Kosanke, who is known to all our members because of her artistic talent and flair, will share some of her expertise in *Techniques of Collecting and Drying Flowers in Silica Gel*. This class is to be taught for two days, August 18 and August 22. Each day the students will meet promptly at 9:00 a.m. in Classroom B. The first day flowers (mostly large members of *Compositae* and *Rosaceae*) will be collected from the gardens and on Friday, Mrs. Kosanke will show how to make arrangements to provide winter color for the home.

Please bring a plastic shoe box and a gallon plastic container with a tight lid. Also, please bring scissors or a sharp knife and wire cutters or pliers that will cut wire. Wire, tape, Flower Dry and flowers will be provided. The cost is \$10.00 for members and \$15.00 for non-members. Limit 18.

Finally, Dr. Brunquist will take all interested on a *Plant Identification Field Trip* on August 20. Meet at 909 York at 9:00 a.m. Free, bring lunch.

"New Gardens of Japan" will be the next free film on our series. This will be at 1:30 p.m. August 9th, Classroom C. All welcome.

* * * * *

The Denver 4-H Fair will be held in and around 1005 York Street on August 6 and 7. Many exhibits and projects will be on display in Horticulture Hall. Booths also will be set up near the amphitheatre and garden produce and baked items will be on sale along with American and Colorado Flags.

Thursday evening at 7:00 p.m. a style show featuring clothes made by 4-H'ers will be held in Horticulture Hall.

Come and see the fine work these young people are doing.

CAMERA DAY

Shutterbugs should be the only bugs evident at Denver Botanic Gardens Saturday, August 16, when photographers, amateur or professional, are invited to capture on film favorite flowers, landscapes or other subjects at 1005 York Street.

For budding camera buffs who seek additional expertise in the use of telephoto lenses, extension tubes, bellows and/or flash Charles M. Major, prominent exhibitor of nature photographs, will give a how-to talk on "Close-Up Nature Photography" at 10 a.m. in Horticulture Hall and with qualified assistants will offer helpful advice in the Gardens until noon and from 1 to 3 p.m.

Although visitors may photograph subjects of their choice at the Gardens throughout the year amateurs are encouraged to visit on this particular day when flowers should be colorful and when outstanding nature photographers from Englewood Camera Club and the Colorado Photographic Arts Center will offer assistance at various locations in the Gardens following Mr. Major's class. Mr. Major has taught at the Photographic Arts Center where he is a member of its board of directors, he has juried at Denver International of Photographic Society of America and he has taught adult education courses elsewhere as well.

Interested persons may bring a piece of cardboard (about 8½" x 11") and aluminum foil to cover for a quick but efficient light reflector. Useful tips will be furnished. There is no charge for the illustrated lecture and, of course, admission to the Gardens is always free.

NOTED MYCOLOGIST TO TALK ON WESTERN MUSHROOMS

Alexander H. Smith, eminent mycologist, professor, Curator and Director of the Herbarium, University of Michigan, will address the Colorado Mycological Society and members of the Denver Botanic Gardens on August 4, 7:30 P.M., in Horticulture Hall.

The subject of his illustrated talk will be "Rocky Mountain Mushrooms." C.M.S. and D.B.G. members will be admitted free but there will be a \$2.00 admission charge for non-members.

Dr. Smith is a retired Professor of Botany from the University of Michigan, is Past President of the Mycological Society of America, the Michigan Academy of Science, Arts and Letters and the Michigan Botany Club.

He was editor of the national publication *Mycologia*, and holds honorary membership in the Mycological Society of Mexico and the British Society of Mycology. He has been awarded a lifetime membership in the French Mycological Society, and the California and Oregon Mycological Societies.

He is a recipient of the Certificate of Merit from the Botanical Society of America and has received the North American Mycological Society award for "Contributions to Amateur Mycology".

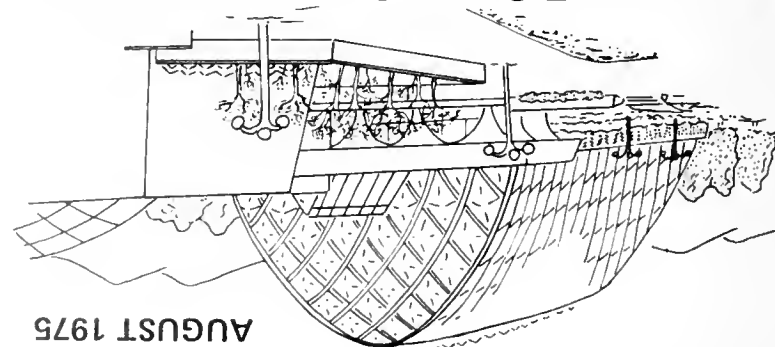
Dr. Smith has written 12 volumes and over 100 papers and journals including "*Mushroom Hunters' Field Guide*" and "*Mushrooms in Their Native Habitat*." His most recent publication is *Field Guide to Western Mushrooms*.

Everyone welcome.

FOR EVERYONE'S BENEFIT

If you are planning a move, please notify the Denver Botanic Gardens a month in advance because second class mail cannot be forwarded. The Post Office will provide a form, or just send our office a note giving old and new address and date of change. Thank you.

DENVER BOTANIC GARDENS, INC.
909 YORK STREET • DENVER, COLORADO 80206



AUGUST 1975

Denver Botanic Garden Site of 1975 A. D. S. National Show

The Denver and Colorado Dahlia Societies after consulting with Dr. William Gambill on the availability of the Botanic Garden Auditorium, made a bid for a National Show. We were awarded the bid which was made three years ago; we are now working down to final show time. Colorado will be honored with the 9th American Dahlia Society National Show, and the Denver Society at the same time will host the 42nd Midwest Conference Dahlia Show. Our two clubs are not as large in membership as they might be, but we formed our committees and started to work. We have had problems, but I suppose no more than other clubs putting on a National Show.

We have two fine sponsors — The Columbia Savings and Loan Association and The Denver Botanic Gardens. The Denver and Colorado Dahlia Societies are the participating hosts. The Cosmopolitan Hotel will be the show headquarters. All room reservations must be made direct to the hotel. Arrangements have been made for transportation to and from the Gardens.

The theme of the show is "MOUNTAIN SPLENDOR" and we have been promised by Mr. Lee Ashley some spectacular dahlia arrangements for the show. The show dates are August 28 through 31 with registration and a hospitality get together Thursday. A planned tour is scheduled on Friday with dahlia entries for the show Friday evening. The Judges' Breakfast and judging of the show is set for Saturday, with a dinner banquet at the Cosmopolitan Hotel Saturday evening. Sunday will schedule important meetings of interest to dahlia growers at the Botanic Gardens. Horticulture Hall will be open to the public at 1:00 p.m. Saturday and all day Sunday from 9:00 a.m. to 5:00 p.m. The Denver Society had a good number of tubers and

pot-roots donated for planting at the Botanic Garden Dahlia Plot. We had donations from Holland and various growers throughout the United States. The Dahlia Club finished separating these roots in preparation for planting this season in the Botanic Garden and the Garden workmen raised the dahlia plot for better water drainage. We hope to have some beautiful dahlia specimens for our visitors to view throughout the summer and especially at show time. Our club is grateful for the fine spirit of cooperation we have received from the whole staff of the Denver Botanic Gardens.

Our clubs strongly urge all dahlia growers in Denver and the surrounding area to enter our dahlia show this August. There are no entry fees — contact any member of the Denver Society for further information.

We know we grow some of the finest dahlias in the United States and we would like your help in proving it to our show visitors. I am sure after viewing this dahlia show our visitors will long remember "MOUNTAIN SPLENDOR" in "COLORFUL COLORADO."

Edward J. Pankoski
Publicity Committee

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Dr. William G. Gambill, Jr., Director of the Gardens, was the awards banquet guest speaker at the 49th Annual Meeting of the Colorado Federation of Garden Clubs, Inc. at Estes Park, Colorado.

Following the convention theme, "Blazing Trails for Progress", Dr. Gambill detailed the many improvements and additions at the Denver Botanic Gardens.

Glenn Park, Assistant Director, will discuss the special problems of growing house plants in the Rocky Mountain region as part of the Denver Public Library's Centennial — Bicentennial program. This program will be held at the Eugene Field Library from 7:30 to 9:00 p.m. on August 26th.

Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR SEPTEMBER

Ah, the fall season will be soon arriving. To me, fall is the best season of all; not just because of the beautiful fall colors, but quite frankly, I get tired of mowing lawns, trying to water everything just right, coping with the bugs and diseases, and trying to "beat the heat." To me, fall is a time when we can relax about the garden and do a little dreaming about next year.

Spring Flowering Bulbs

It is not too early to begin planning your garden for the spring flowering bulbs such as tulips and daffodils which should be planted in the fall. Good quality bulbs should be purchased early or as soon as they are available on the market. Waiting too long to purchase your bulbs usually results in an inferior quality with only the picked-over and badly bruised bulbs left. It is also well to get them into the ground as soon as they are available so that you are not cut short like many were last year. I was among them and found myself planting bulbs during the Christmas holiday. Some blossoms resulted but they were certainly not as satisfactory as they would have been had they been planted earlier. The reason is that when bulbs are planted in the fall, they immediately develop their root system from the stored food in the bulbs. If the ground is at or near freezing temperatures when the bulbs are planted, a good root development will not occur and this will effect the shoot growth and the flower formation later on. For best results, bulbs should be planted in well-drained soils. In Colorado we recommend planting them deeper than the charts distributed with the bulbs indicate. If you would like a copy of the chart adjustment for Colorado conditions, you may write to the author at 909 York Street, Denver, Colorado 80206, or call 355-8306.

Fall Planting of Trees and Shrubs

Even though spring is considered the best time to plant or transplant trees and shrubs, many can be successfully established in the fall provided a little extra care is given. If you have trees and shrubs in your yard that need to be moved from one place to another, it is advisable to move them just as soon as they begin to drop their leaves. Don't wait until all the leaves have dropped. The important consideration in fall planting is that there is sufficient time for re-establishment of a root system before the ground freezes. Plants that do not have a sufficient root system will tend to dry up in winter. If you plant in the fall, it is a good idea to apply a mulch, such as wood chips or other insulating material over the surface of the ground after planting in order to delay penetration of frost. Such mulches should be removed in the spring, however, to allow the ground to warm up; otherwise, it will tend to delay resumption of growth in the spring. As to the selection of a mulch, most any organic material will do as long as it does not tend to compact. Avoid such things as finely pulverized peat or layers of grass clippings.

Fall Mowing

The question most often asked is, "Should the lawn be cut shorter in preparation for winter?" This has been a common practice in order to avoid the matting effect that

may occur during periods of prolonged snow cover. My question is, "What is short?" If you are mowing your lawn at the height of 2 to 2½ inches, the final mowing could be reduced to about one and three-fourths inches. Cutting it shorter than this, I believe, will shock the grass and make it less apt to survive the winter, particularly if we have an open, dry winter like last year.

Preparation for Winter

This is the time when the plants in your yard are getting ready, in fact they have been getting ready for winter for some time now. As mentioned in our previous issues, you can help your plants get ready for winter by gradually withholding water where possible but care should be taken not to withhold too much to the ultimate detriment of the plants.

Much has been said about fertility programs in the fall. Some people do not advise the use of nitrogen fertilizers because it will tend to produce unwanted growth that could be subject to frost or freeze damage. This is probably true if high rates of nitrogen were to be added along with heavy watering. Most authorities, however, now agree that nitrogen applied in the fall at moderate rates is beneficial to plants and for the most part, will not stimulate new growth.

Most trees and shrubs begin their preparation for winter because of two very basic circumstances. One is shorter day length and the other is cooler nights. Linden, Oak, and Hackberry for example, have already set their winter buds and are going into the dormancy cycle regulated mostly by shorter day lengths. This is, for the most part, irreversible. Such plants rarely, if ever, suffer from freeze injury due to untimely cold weather. On the other hand, trees like Green Ash, Goldenrain tree, and Soft Maples, will occasionally put out a late flush of growth, particularly if encouraged by heavy watering and fertilizer practices. These are the ones that should be gradually hardened off by withholding or reducing watering practices. When cooler weather sets in and plants have slowed down their growth, there is no reason why trees and shrubs cannot be fertilized in the fall. I prefer to wait until October, or at least until leaves are beginning to drop and fall color is showing.

The same is true with the lawn. Blue grass turf responds best to a nitrogen fertilizer when applied during the cool season. It is at this time that blue grass tillers, or side growth, will develop. These tillers help to fill in some of the open spots in your lawn.

Rodent Control

Many gardeners experience severe damage from field mice, voles and related rodents this time of year. The greatest damage seems to be in outlying areas where there are adjacent fields. During the winter months, the rodents find blanket covering beneath pfitzers, tammy junipers and similar evergreens that are dense enough to give them protection. Unfortunately, the damage that they do isn't really too obvious until the spring and summer months. By then, control is too late. This is another case when an ounce of prevention is worth a pound of cure. Steps can be taken to prevent rodent damage. First, make sure that leaves and other mulch materials are kept away from the base of the

(Continued back page)

SEPTEMBER CLASSES

Many varied classes are to be offered by the Denver Botanic Gardens starting in September. Although all members should have received the *Fall List of Classes* by now, a reminder might be in order. Don't delay in signing up for the class you wish. Many are quite popular and are limited in size.

Plant Review for those in the National Junior Horticulture Association program will be taught at 9:30 AM, September 6, Classroom A. This is an especially important session for the contest is the next Saturday.

Also on September 6, Mr. Novitt, who has displayed hydroponic units at the Gardens all summer, will discuss *Mineral Water Gardening*. This is to be taught at his garden, 5680 E. Cornell Ave. at 9 AM (turn right off Yale at So. Hudson and go one block to East Cornell). Fee \$1.00.

On September 9 join us as we *Tour the Governor's Mansion and Gardens*. Meet at 12:45 at 909 York Street, or if you wish to try to find a parking space at 8th and Logan, be there at 1 PM. Limit 20. Please sign up after August 29th. Free.

Two Elementary classes in *Bonsai* will be offered on Monday, September 15, 22 and 29th. Sign up either for the morning one, 10 AM until Noon, or the evening at 7:30 to 9:30 PM. The cost is \$10.00 for members, \$15.00 for non-members. Limit 15 in each class.

This is to be followed by *Intermediate Bonsai* on the Mondays in October with the same choice of morning or evening hours.

On the last *Plant Identification Field Trip* this season, we may see:

"Thou blossom bright with autumn dew,
and colored with the heaven's own blue . . .

(The Fringed Gentian by William Cullen Bryant)

Meet at 909 York on September 17 at 9 AM. Bring lunch. Free.



The Guides will soon resume their regular program of tours again. So that they may learn the new plants in the Conservatory, Mrs. Hayward has planned two brush-up sessions on September 17 and 24; meet at 1 PM at the entrance to the Conservatory.

Also on the 17th, staff member Larry Latta will begin a six week course in *Vegetable Gardening*. No doubt many members had productive gardens this summer, but basic information on site selection, soil preparation and related matters is always useful. Meet at 10 AM in Classroom A. The fee is \$10.00 for members and \$15.00 for non-members.

The *Chrysanthemum* is considered by many the flower of fall. Come on September 20 at 9 AM, Classroom C, when Ray Blue of the Men's Garden Club will explain culture and care of this beautiful plant. Free.



Those of you who have visited the Gardens in summer know that much work has been done. New plantings in the outside gardens at the Denver Botanic Gardens in 1975 total 71 different varieties of plants. Have you seen these:

Abies concolor
Acer ginnala
Acer platanoides 'Emerald Queen'
Amelanchier grandiflora
Aronia arbutifolia var. *Brilliantissima*
Betula nigra
Cercis canadensis
Cercis canadensis 'Forest Pansy'
Cornus baileyi
Cornus stolonifera 'Kelseyi'
Corylus avellana var. *contorta*
Cotoneaster acutifolia
Cotoneaster apiculata
Cotoneaster divaricata
Euonymus alata
Euonymus alata var. *compacta*
Forsythia 'Farrand Hybrid'
Gleditsia triacanthas var. *inermis* 'Imperial'
Juglans regia 'Carpathian'
Juniperus chinensis 'Armstrong'
Juniperus chinensis 'Blaauw'
Juniperus chinensis 'Hetzi'
Juniperus chinensis 'Procumbens'
Juniperus sabina 'Arcadia'
Juniperus sabina 'Blue Danube'
Juniperus sabina 'Broadmoor'
Juniperus sabina 'Buffalo'
Juniperus sabina 'Scandia'
Mahonia aquifolium 'Compactum'
Malus ioensis 'Prairie Rose'
Malus zumi var. *calocarpa*
Picea pungens
Picea pungens var. *glauca* 'Thompson'

Pinus aristata
Pinus cembra
Pinus cembroides var. *edulis*
Pinus flexilis var. *reflexa*
Pinus flexilis 'Silver'
Pinus mugo
Pinus strobus
Pinus strobus var. *fastigiata*
Pinus sylvestris var. *fastigiata*
Potentilla 'Katherine Dykes'
Prunus cistena
Pyracantha angustifolia 'Gnome'
Quercus macrocarpa
Quercus palustris
Quercus borealis
Rhamnus frangula 'Tall Hedge'
Rhus aromatica
Rhus aromatica 'Green Globe'
Rhus typhina var. *laciniata*
Rosa 'Austrian Copper'
Sorbus aucuparia
Spiraea nipponica 'Snow Mound'
Syringa amurensis var. *japonica*
Syringa meyeri
Viburnum X carlcephlum
Viburnum carlesii
Viburnum dentatum
Viburnum dilatatum
Viburnum lantana var. *rugosum*
Viburnum trilobum
Viburnum trilobum 'Hahs'
Weigela 'Vanicek'
Yucca filamentosa

Our Assistant Director, Glenn Park, who has been directly involved in all of the planning and planting, will take those interested on a leisurely *Tour of the Outside Gardens*. Meet at 909 York Street at 9 AM on September 23. Free.

Dr. Zeiner will teach *How to Force Bulbs for Indoor Bloom* on September 27, 9 AM, Classroom B. Free.

And finally on the same day, Dr. Gambill will lead a *Tree Walk in Washington Park*. Meet at 1 PM at 909 York Street or 1:20 PM at 1300 E. Virginia Ave. Free.

Five classes in *Rose Culture* will be offered by the Community College of Denver at the Denver Botanic Gardens. Mr. Ross Lahr, well known rosarian, will teach these from October 15 through November 12 from 7:30 to 9 PM. Such topics as soil preparation, bed location and planting through pruning and winter care will be discussed. For further information, call Sara Collier at 266-1881.

The September movie will feature a Disney Production, "One Day at Teton Marsh," based on the book by Sally Carrighar. This is to be shown on September 13 at 1:30 PM. Classroom C. Free.

The Botany Club is willing to help identify slides of Colorado wild flowers. Their regular meeting is the third Friday of each month. Contact Marjorie Shepherd 733-8229 for further information.

Visitors to the Helen Fowler Library have been admiring the handsome bulletin board displays. These feature a current flower or garden topic and are set off with appropriate books. Our thanks go to Nancy Jackson for all her work.



Children's Garden Graduation will be held on September 6 at 1 PM in Horticulture Hall. Certificates will be awarded to all the children who have successfully completed the program and prizes will be presented to the winners of the best gardens. Refreshments will be served and all are invited to tour the Children's Garden across the street after the program.

OAK TREES HONORING TWO D.B.G. FRIENDS

A group of ten oak trees has been planted in the Gardens in honor of Mrs. William H. (Katharine B.) Crisp and the late Mr. Edward Mixa. Some twenty friends of Mrs. Crisp, the Associates of D.B.G., and Around the Seasons Club joined in contributing funds for the trees planted in tribute to Mrs. Crisp for her long service to the Gardens, particularly on the Editorial Committee.

The Edward Mixa trees were made possible by a gift from Mrs. Mixa and her son, Edward. Mr. Mixa had done much handicraft work for the Gift Shop and other projects.

There are four Red Oak, three Pin Oak and three Bur Oak trees in the group, ranging from six to twenty feet in height, and located just east and south of the Home Gardeners Workshop Demonstration Area near the center of the Gardens.

* * * * *

A handsome new shadow box for the edification of our many visitors, especially those on tours, has been placed in the Education Building. This displays tropical seeds like mango, kapok and pandanus, along with an informative label.

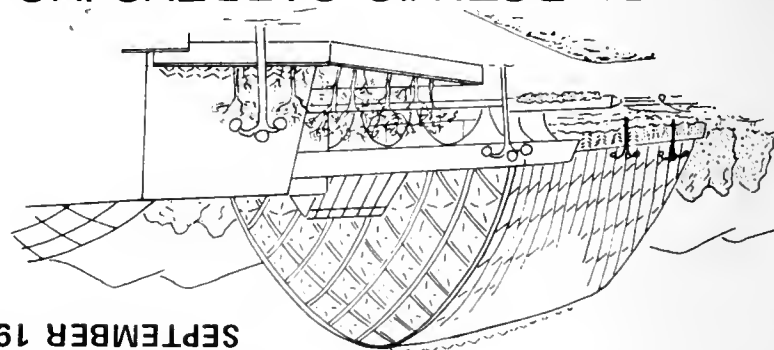
Thanks to guides Judy Moore, Peg Hayward and Helen Bergkamp for all their work, and to Harold Bergkamp for the construction of the shadow box and easel.

* * * * *

It's Thrift Shop Time Again!

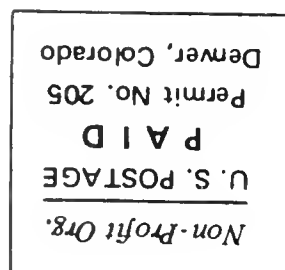
The University Thrift Shop, 600 Ogden Street, gives proceeds from sales of donated clothing and other items to numerous civic organizations, including the Denver Botanic Gardens. Items for sale may be taken to the Shop during store hours, 9 AM to 4 PM, Monday through Saturday. Our next benefit week is September 29 through October 4. Your help is appreciated.

DENVER BOTANIC GARDENS INC.
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SEPTEMBER 1975

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GARDENING TIPS (Continued)

shrubs. One can also resort to use of various live traps available from farmer's feed and supply stores. This method, however, requires a lot more time and maintenance than many people like to expend.

Another good preventative method is the use of various rodent poisons that are available. Since these are very toxic materials, they should be used with care, particularly, so that they do not come in contact with children, birds, or household pets. One of the best methods is to take lengths of black polyethylene pipe about one inch in diameter and about 12 - 18" long; place the rodent poison towards the middle of the pipe making it inaccessible to only very small animals such as mice. These traps can then be placed beneath the shrubs out of sight and relatively safe from discovery by children. Most of the effective qualities of most poisons are lost in time so it will be necessary to renew the poisons two or three times during the winter months. As cautioned in last month's column, use these poisons with utmost care, follow the directions on the label and be sure that the poisons are stored in a location not accessible to children.

Dr. J. R. Feucht

It's that time again when people bring mushrooms to identify. It will help the members of the Mycology Club if you will remember these tips from *Spores Afield*.

Bring fresh specimens wrapped in wax paper, not air-tight.

Bring a spore print on WHITE paper.

Try to identify your own mushroom.

Write a gross description of the fungus, its size, place found, growing habitat, altitude — and include your name.

DO NOT — bring frozen specimens.

DO NOT — wrap in plastic or plastic bag; it makes them sweat and unusable.

IKEBANA DEMONSTRATION AT THE GARDENS

The local chapter of Ikebana International will hold a demonstration in Horticulture Hall on Friday, September 26, at 2 PM. It will be conducted by Miss Tasumi Tshigahara, Grand Master of the Sogetsu School in Tokyo. Tickets may be obtained for a \$6 donation. On Saturday, September 27, there will be an all-day Ikebana workshop, 10 to 12, and 1:30 to 3:30, also conducted by Miss Tshigahara. Donations for that day are \$5 each session or \$4 each session to observe. Information and reservations can be obtained by calling Mrs. Ray Light, 860 Inca Place, Boulder 80302, 499-9606. Also, all members will have tickets for sale.



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GARDENING TIPS FOR OCTOBER

This is probably as good a time as any to reflect on the past growing season. Whether we have a killing frost or not, the growing season is over and all of our trees and shrubs are hopefully well into the hardening-off stage so that they can take whatever mother nature cares to dish out.

A few years ago, this column reflected back on the growing season and called it "The Year of the Bugs". This has been a year we can call "The Year of Diseases." As a matter of interest, records kept in this office show that requests for assistance with diseases during the month of July were 42% above a five-year average and 40% above the average for the month of August. Normally, insects are the big problem during these months but the climatic conditions seem to promote more diseases such as Fire Blight in fruit trees.

Fire Blight Severe

Unless you have a resistant strain of apple tree such as Red Delicious, you probably have experienced Fire Blight. This leads to the question, "What can I do with blighted trees"? Unfortunately, there are no effective control measures, at least of a chemical nature. The Agrimycin and Streptomycin sprays frequently recommended are really only effective when applied during the blossom stage in early spring. Even then they are at best, only a partial control. Fire Blight is a bacterial disease and is systemic in nature; that is, it travels throughout the system of the plant itself.

There are various stages of blight conditions. The first is blossom blight, followed by twig blight; the most common seen this year, and fruit blight which results in shriveling and mummifying of the fruit. The most serious of all is the so-called hold-over canker. The latter usually shows up as a discoloration of the main trunk of the tree.

Fire Blight can be pruned out during the blossom, fruit and twig stages. When pruning, use sterile techniques, dipping the pruning shears in alcohol between cuts or, more conveniently, spraying them with household lysol. Always make the cut about 12" back on any blighted twig to be sure that you are removing the entire diseased area.

Slow Season for Vegetables

This has been a strange growing season for vegetables. You have undoubtedly discovered by now that cold-season crops such as cabbage, lettuce and broccoli and root vegetables like beets and carrots have performed very well, at least until the heat hit in the latter part of the summer. You may have also noticed, however, the tomatoes were very late in ripening, beans were not up to snuff compared to last year and some varieties of squash simply refused to be productive. This was, in fact, a very late year, thanks to a very cold spring and particularly an unseasonably cold June. In fact, I was beginning to think that summer would never get here. This goes to show us how various vegetable crops are dependent on temperatures. Tomatoes, for instance will fail to set well until night time temperatures are above 50 degrees regardless of daytime temperatures. The same is generally true of other warm-season vegetables such as peppers and cucumbers. During the rainy season, squash

sometimes developed into a rather strange shape, or in many cases, failed to develop fruit at all, aborting a few days after the blossom opened. As much as we need rain, at times it can have an adverse effect by hindering effective pollination in certain plants. At times during the rainy season I was tempted to run out with an umbrella to protect the plants so that I could be sure of proper pollination. Then I remembered that it would only be a few days before the weather would change, as we all know it does in Colorado, and I'd be back in production again. It seems my garden went from almost no production of squash to an overabundance and then my problem became how to get rid of them when the neighbors hate squash. Oh well, this is what makes gardening fun and different. No two years are alike and it gives us something to talk about during the long winter period.

Spring Bulbs

October is a good time to purchase and plant your spring flowering bulbs. To be sure that you will have a showy spring bulb garden, pay close attention now to your soil, particularly, the drainage. Where soils are heavy, the quality of the flowers will decrease, especially if you intend to leave them in for more than one year. In very heavy soils the bulbs often rot before they have a chance to emerge in spring. By good drainage, I mean a soil, even if it is on a slope, which has permeability and allows water to penetrate into the subsoil.

When spring bulbs are planted in the fall, the first thing that the bulbs do is develop roots. This is often accomplished within a few weeks after planting. The type of soil will also dictate how deep bulbs should be planted. Most planting charts obtained when you purchase your bulbs are based upon a well-drained soil in eastern United States. In Colorado it is better to plant them 2" deeper, but only providing that the soil is well drained and aerated. If the soil is heavy and you insist on planting the bulbs without soil improvement, count on them for only one year and plant them even more shallow than the charts indicate. Shallow planting will promote splitting of the bulbs and this will reduce the number of years the bulbs will produce flowers.

Buy Bulbs Carefully

Care should be taken in the purchase of bulbs. Look for the largest and healthiest ones. Check carefully for mechanical injuries or signs of mold or mildew and destroy any with these problems. It is better to pay a little more for healthy and well-cared for bulbs than paying a cheaper price for bulbs that will result in a very poor flower garden next spring. Be wary of the way bulbs are advertised. Many imported bulbs are measured in centimeters and many local dealers advertise them giving measurements in inches. A bulb that is advertised as having a size of 2.5 centimeters may sound large but if you know your metric system, you will know that that is the equivalent of 1 inch.

Fall Soil Preparation

This column has not really given too many gardening tips but maybe it's because I am getting tired of gardening and

(Continued on back page)

CHRISTMAS SALE

Around the Seasons is getting ready for the Christmas Sale (November 21 and 22) and needs help. Does anyone have money plant, love-in-the-mist, statice, golden yarrow, teasel or allium? Also needed are acorns, cones, buckeyes, and sweet gum balls. Other interesting types of dried materials will certainly be appreciated and put to good use. Please bring such items to the Botanic Gardens House, 909 York, by October 15th. For further information call 297-2547 or Jane Middlebrook at 789-2887.

Another good reason to visit the Sale is to see the fascinating array of treasures available there. Besides calendars, jewelry, note cards and pottery, there are also many books and pamphlets.

The horticultural side of Denver history, told by the man who made much of that history, is fascinating reading for those interested in our plants, parks and city planning. The gift shop offers two such publications written by S. R. DeBoer, famous landscape architect and city planner.

Around the Seasons in Denver Parks and Gardens is a delightfully human and informative account of the unfolding seasons. It is illustrated by the unusual and lovely drawings of Francis White Novitt. (A limited number of copies are still available.)

Plans, Parks and People, Mr. DeBoer's autobiography, published in the December 1972 issue of *The Green Thumb*, concentrates on the building of the city's parks and parkways in the early years of this century. Dozens of seldom seen, old-time photos and drawings add to its rich account. Here is a part of our history not found in other books.

October Classes

School buses will soon be lined up in front of the Gardens for the busy season is upon us! Children may depart from their tour filled with enthusiasm from the experience and the plants they have seen. Much of course depends on the teachers and the preparation they have given the classes. Also much depends on the volunteer guides. You can help. If you enjoy plants and people, sign up for *Tropical Plants of the Conservatory*, Wednesday, October 1, through November 19 from 1 to 3 p.m. The cost is \$25.00 which is refunded if the student guides for a total of 40 hours. Limited to 25 students.

Gardening Under Lights, a half day class, will serve as an introduction to this fascinating hobby. Some topics may be types of fixtures, quality and quantity of light, and suggested easy plants to try. Meet at 9 a.m., October 4, in Classroom C. Free.

The African Violet Workshop, a very popular annual event, is scheduled this year on October 18 in Horticulture Hall. The Hi-Hopes Study Club tries to provide as much individual instruction as possible by having various demonstrations throughout the morning. Come at 9 a.m. or later as you wish. Fee 50¢ payable at the door.

The Colorado Federation of Garden Clubs, Inc., is pleased to announce a series of lectures which are planned from October to April.

These, designed to be of general interest, will be offered at the Headquarters Building, 1556 Emerson, and will cost fifty cents for members of the Federation and \$1.00 for non-members.

On October 22 from 9:30 - 12:30 the schedule shows "Forcing Spring Bulbs" by Herb Gundell and "House Plant Care" by Gary Neidercorn. Register at the door.

The Annual Meeting of the Associates is scheduled for October 21 in Horticulture Hall.

Our speaker at the Associates Annual Meeting will be Charles Marden Fitch. Mr. Fitch is a well known author who has contributed illustrated articles to *The New York Times*, *Americas*, *Bon Voyage*, the American Orchid Society *Bulletin*, *Horticulture*, *Flower and Garden*, and other publications.

As a television director and producer for the Peace Corps of the United States Department of State and a Communication Consultant for the Organization of American States, he lived for several years in the tropics, where he studied, photographed, collected and cultivated hundreds of plants.

He is a member of the Garden Writers Association of America, a Fellow of the Royal Horticultural Society, and the recipient of several national awards for his work in conservation.

His most recent book is *Complete Book of House Plants Under Light*.



CHARLES MARDEN FITCH

Photo by Christopher Quinn

Dr. William G. Gambill, Jr., Director of the Denver Botanic Gardens, has recently returned from Washington, D.C., where he attended a meeting of the American Horticultural Society's Commission on Plant Science Data Center.

This is a significant commission which attempts to keep track of the ornamental plants of North America by a computerized record keeping system which is based on reports of plant material from major Botanic Gardens and Arboreta. This effort is especially important as more and more plants are threatened with extinction, for as S. Dillon Ripley of the Smithsonian reminds us: "All animals are dependent on plants for food and survival. A diversity of plant species is required to supply human necessities and to maintain an ecological stability in the biosphere."

Dr. Gambill also attended the Thirtieth Annual Congress of the American Horticultural Society which met this year in Honolulu. Several sessions focused on plant propagation, tropical plant cultivation and acclimatization, and tropical plant materials. Tours to private gardens showed beautifully landscaped areas and Lyon Arboretum, Foster Gardens and the Alice Spaulding Home were also visited.

OCTOBER, 1975

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CALENDAR OF EVENTS FOR OCTOBER (Continued)

OCTOBER

20)*	10:00 a.m.	Education Building – Lecture Room “B”	Intermediate Bonsai – Mrs. Mary Neil
20)	12 noon	Botanic Gardens House – Dining Room	Colo. Garden Show, Inc.
20)*	7:30 p.m.	Education Building – Lecture Room “B”	Intermediate Bonsai – Mrs. Mary Neil
20)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council - Wilderness Workshop
21)*	10:00 a.m.	Education Building – Horticulture Hall	Associates Annual Meeting & Luncheon
21)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club
22)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Larry Latta
22)*	1:00 p.m.	Education Building – Lecture Room “A”	Tropical Plants of the Conservatory – Mrs. P. Hayward
22)*	7:30 p.m.	Education Building – Lecture Room “C”	“Rose Culture” – Mr. Ross Lahr (For information call: Sara Collier – 266-1881)
23)	7:30 p.m.	Botanic Gardens House – Main - Dining & Kitchen	Men’s Garden Club of Denver
24)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
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27)*	10:00 a.m.	Education Building – Lecture Room “B”	Intermediate Bonsai – Mrs. Mary Neil
27)*	7:30 p.m.	Education Building – Lecture Room “B”	Intermediate Bonsai – Mrs. Mary Neil
27)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council - Wilderness Workshop
28)*	7:00 p.m.	Education Building – Lecture Room “B”	Corps of Engineers - Committee Meeting
28)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society
29)*	1:00 p.m.	Education Building – Lecture Room “A”	Tropical Plants of the Conservatory - Mrs. P. Hayward
29)*	7:30 p.m.	Education Building – Lecture Room “C”	“Rose Culture” – Mr. Ross Lahr
29)	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Open Space Council - wilderness Workshop
31)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International Workshop
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NOVEMBER

1)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers
3)*	10:00 a.m.	Education Building – Lecture Room “A”	House Plants for the Amateur – Dave Lankhorst
4)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
4)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
4)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
4)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Audubon Society
5)	9:00 a.m.	Education Building – Horticulture Hall	International Institute of Education
5)*	10:00 a.m.	Education Building – Lecture Room “A”	House Plants for the Amateur – Dr. Helen Zeiner
5)*	1:00 p.m.	Education Building – Lecture Room “A”	Tropical Plants of the Conservatory – Mrs. P. Hayward
5)*	7:30 p.m.	Education Building – Lecture Room “C”	“Rose Culture” – Mr. Ross Lahr
6)*	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council - Board Meeting
6)	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society
7)*	11:00 a.m.	Botanic Gardens House – Main - Dining & Kitchen	Civic Garden Club, Inc.
8)	10:00 a.m.	Education Building – Lecture Room “B”	Colorado Organic Grower’s & Marketer’s Association
9)	1:30 p.m.	Education Building – Lecture Room “C”	FREE FILM

**For members or enrollees only.*

This fine editorial from the Denver Post reinforced the information about endangered species published in the February newsletter.

PROTECT THOSE PLANTS

Colorado, with thousands of beautiful wild flowers and plants in the high country, faces a new threat. It is "plant-napping."

Encouraged by the boom in house and garden plants, thieves are making off with trees, shrubs, potted ornamentals and flowers from wilderness areas, homes, offices, public highways and city parks.

The Smithsonian Institution, in accordance with the Endangered Species Act of 1973, has drawn up a list of threatened species of higher plants native to the United States. The Smithsonian concludes that 10 percent of the some 20,000 species of native higher plants are in danger of extinction.

"When a plant species is extinguished", the Smithsonian magazine warns "...its gene pool cannot be duplicated or reestablished and is lost forever. Each kind that we destroy narrows our options. Imagine the loss to mankind if we had destroyed the cinchona before discovering quinine's anti-malarial qualities".

The Smithsonian warning is timely, especially for Colorado with its numerous state parks, national forests and recreation and wilderness areas.

The penalties for theft of plants from public or private property can be severe. But a solution to the problem may be in formation of a Society for the Prevention of Cruelty to Plants. They could use the protection.

For further information on this timely subject, please see *National Parks and Conservation* and *American Forests* magazines, both of April 1975 and the A.A.B.G.A. Bulletin of January 1975 and the report of their Committee on Endangered Species.

The following is a list for Colorado of the Endangered and Threatened Species as reported by The Smithsonian.

ENDANGERED

FAMILY	SPECIES
Apiaceae	<i>Neoparrya lithophila</i>
Asteraceae	<i>Haplopappus fremontii</i> ssp. <i>monocephalus</i>
Asteraceae	<i>Senecio porteri</i>
Boraginaceae	<i>Cryptantha weberi</i>
Brassicaceae	<i>Arabis oxylobula</i>
Brassicaceae	<i>Braya humilis</i> ssp. <i>ventosa</i>
Brassicaceae	<i>Eutrema penlandii</i>
Brassicaceae	<i>Lesquerella pruinosa</i>
Cactaceae	<i>Sclerocactus glaucus</i>
Caryophyllaceae	<i>Stellaria irrigua</i>
Fabaceae	<i>Astragalus deterior</i>
Fabaceae	<i>Astragalus detritalis</i>
Fabaceae	<i>Astragalus lutosus</i>
Fabaceae	<i>Astragalus microcymbus</i>
Fabaceae	<i>Astragalus naturitensis</i>
Fabaceae	<i>Astragalus osterhoutii</i>
Fabaceae	<i>Astragalus schmollae</i>
Fabaceae	<i>Oxytropis obnapiformis</i>
Fabaceae	<i>Trifolium lemmonii</i>
Hydrophyllaceae	<i>Phacelia formosula</i>
Onagraceae	<i>Gaura neomexicana</i> ssp. <i>coloradensis</i>
Polygonaceae	<i>Eriogonum ephedroides</i>
Ranunculaceae	<i>Aquilegia micrantha</i> var. <i>mancosana</i>

THREATENED

Boraginaceae	<i>Cryptantha elata</i>
Boraginaceae	<i>Cryptantha stricta</i>
Boraginaceae	<i>Mertensia viridis</i> var. <i>cana</i>
Brassicaceae	<i>Arabis gunnisoniana</i>
Brassicaceae	<i>Draba exunguiculata</i>
Brassicaceae	<i>Parrya nudicaulis</i>
Brassicaceae	<i>Rorippa coloradensis</i>

Cactaceae	<i>Sclerocactus mesae-verdae</i>
Cyperaceae	<i>Carex microptera</i> var. <i>crassinervia</i>
Fabaceae	<i>Astragalus wetherillii</i>
Fumariaceae	<i>Corydalis caseana</i> ssp. <i>caseana</i>
Poaceae	<i>Phippsia algida</i>
Polygonaceae	<i>Eriogonum brandegei</i>
Polygonaceae	<i>Eriogonum saurinum</i>
Polygonaceae	<i>Eriogonum viridulum</i>
Ranunculaceae	<i>Aquilegia chrysantha</i> var. <i>rydbergii</i>
Saxifragaceae	<i>Sullivantia purpusii</i>

Finally, can you believe that according to *The Avant Gardener* of August, 1974 the dandelion has been placed on England's endangered wildflower list!

* * * * *

"The Green City," a twenty-five minute film which has won an International Film Award will be shown on October 11 at 1:30, Classroom C. The subject is the preservation of open spaces in cities, acquisition of park land, modern methods of subdivision development and conservation of nature by builders and city officials. Free. All welcome.



Brrrrrr!

As many of you may have noticed, the Pygmy Date Palms that spent the summer on the balcony of the Education Building, have been brought back inside. If any of your house plants are still out, it is time to bring them in.

Introducing

Lee Schwade has joined the Staff of the Denver Botanic Gardens as a Botanist-Horticulturist. Lee's position will involve work with ornamental plantings, responsibility in the Children's Gardens, and in the Chatfield Arboretum. His education has equipped him for this wide variety of responsibility for he holds a BA degree from Regis, taught biology for five years at the high school level, was awarded a National Science Foundation Grant to the University of Georgia, completed his M.A. at the University of Northern Colorado and has started his doctoral program at Colorado State University in Biological Nutrition. All this plus work at the Community College in Urban Horticulture!

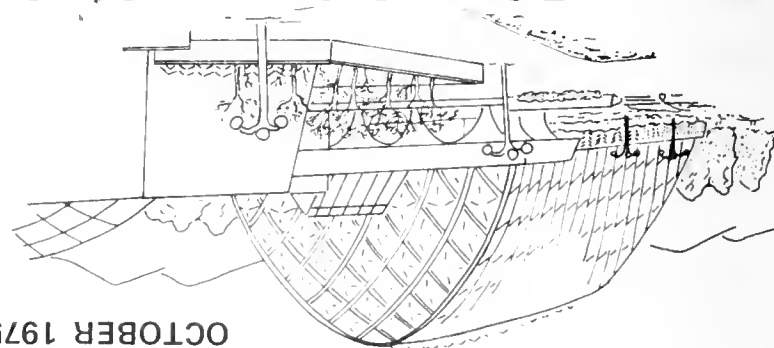
Lee is looking forward to working with the expanding programs at the Gardens and we welcome him here.

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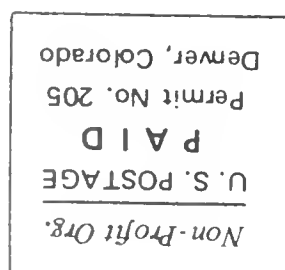
"Orchids in the Rockies" is the show theme for the Annual Meeting of the American Orchid Society. This national meeting is to be held at the Regency Hotel, 3900 Elati, from October 8 through 12th. The show will be open to the public at 10 a.m. on October 10 and continue until 3 p.m. on October 12.

For further information on any aspects of this convention, please call Mr. S. L. Stewart, 355-5831.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



OCTOBER 1975



GARDENING TIPS (Continued)

looking forward to sitting back and relaxing for a while. That's why I think there is a real advantage to living in an area of so many varied seasons.

At the same time, however, there are things that must be done in the garden such as cleaning up debris after a hard frost and improving conditions for next spring. Fall is the best time to do this by plowing in your well-rotted compost and other organic material. I like to leave the ground rough and lumpy to allow better air penetration. Freezing and thawing during the winter will break down the clods and leave you with a mellow garden in spring without doing so much work.

Last year I experimented with an idea that's not really new. It's what I call "composting in place". Rather than put the debris on the garden, I windrow it along the edge of the garden and run over it with a rotary mower repeatedly until it is all ground up. By moving the mower back and forth over the material with the shoot pointed to the garden, it automatically spreads the material over the surface of the garden, then it can be plowed in. Not all of the debris is decomposed during the fall and little if any decomposition occurs in winter, but the presence of the roughage in the top few inches of the soil helps to keep it open and allows for good air penetration.

Something to be avoided, however, are weeds that have gone to seed and certain garden annuals like alyssum, that do become weeds themselves from the volunteers in spring. To some extent, you can plan your garden to reduce the number of volunteers by using triploid varieties. Many varieties on the market today are triploid and they produce few, if any viable seeds.

When all your garden chores are finished this fall, you can sit back and relax, dreaming about your garden for next year.

Dr. J. R. Feucht

FALL CLEANING? Don't dust all those books you don't read or use. Bring them to the library for the annual book sale. They'll gather no dust there!

New library accessions are now being displayed on the southern portion of the first north-south stack. Most of these books are new but some may be older volumes which are new to the library. The books will be rotated on a monthly basis and may be circulated while on display.

The following books have been received from Honingklip Nurseries, Capetown, South Africa:

Rycroft, H.B. *What Protea Is That?* 1970.

Judd, Eric, *What Aloe Is That?* 1967.

Rousseau, Frank, *The Proteaceae of South Africa.* 1970.

Rawe, Rolf, *Succulents In the Veld.* 1968.

Rice, Elsie Garrett, *Wild Flowers of the Cape of Good Hope.* 1950.

Rourke, J. P., *Taxonomic Studies on Leucospermum, R. Br.* 1972.

Williams, J. M., *A Revision of the Genus Leucadendron (Proteaceae).* 1972.

Harrison, Richmond E. *Handbook of Trees and Shrubs.* 1974.

Batten, Auriol, *Wild Flowers of the Eastern Cape Province.* 1966.

van der Spuy, Una, *Wild Flowers of South Africa for the Garden.* 1971.

van der Spuy, Una, *South African Shrubs and Trees for the Garden.* 1971.

Eliovson, Sima, *The Complete Gardening Book.* 1974.

Reynolds, G. W. *The Aloes of Tropical Africa and Madagascar.* 1966.

Plant Organizations

Are you planning any special events that are open to the public? If so, please remember we are glad to help publicize such events in the Newsletter. Our deadline is the tenth of the month prior to the event.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR NOVEMBER

Except for a few more turns of the compost and some minor pruning here and there, outdoor gardening has come to a close and attention can be turned to some challenges in indoor gardening.

FORCING BULBS

One of the most fun and rewarding indoor garden occupations is forcing bulbs into bloom for winter-time enjoyment. You need not be an expert to do it but a few steps should be followed to ensure success.

Before going into the forcing procedure, let's first examine the life cycle of a bulb to better understand how bulbs can be forced. First of all, a bulb is really a bud on a very short stem with special food-storing capabilities. Under proper conditions the "bud" forms roots shortly after planting enabling the bud, which already contains the flowers and leaves in miniature form, to elongate into a full-fledged plant.

Some bulbs, like the paper white narcissus, are ready to grow without any special treatment. Simply place them in moist sand, gravel or soil and watch them develop into a flowering plant in as little as six weeks. Other bulbs, such as most tulips, hyacinths and daffodils will require a cold treatment in order to break a natural dormancy just as the buds on outdoor woody plants require. To force the bulbs, they should be planted in pots containing moist, well-drained soil and kept in a cool area (40°F best) for several weeks. Most tulips should be given 13-15 weeks of cold treatment; hyacinths and most daffodils need only 6-8 weeks. Most important is keeping the soil moist, but not overly wet, during the cold period.

After the cold period, the pots should be moved to a place where room temperature is about 60° - 65°F (such as a basement) until the top growth is about 3 or 4 inches tall. They then can be moved to a brighter and warmer room for forcing into bloom.

It is also possible to buy bulbs already pre-treated for forcing. Such bulbs should be checked carefully, however, before purchase. Avoid bulbs that have already put out top growth and those that are bruised or showing fungus growth on the surface.

WINTER WATERING

This fall has been very dry and it is not possible to predict the kind of winter we will have. If dry conditions continue, deep watering of all your trees and shrubs is in order. Special attending needs to be given to the shallow-rooted trees such as birch, maple and linden (basswood); shrubs such as lilac, Amur maple, euonymus and viburnum and all evergreen types. I prefer to water using a hose-attached soil needle like the Ross Root Feeder. This device puts the water where the roots are, thus not only conserving on water but also aerating the root zone at the same time.

Caution: Do not attempt to water during subfreezing temperatures.

DELAY EARLIEST BLOOMERS WITH MULCHES

Plants that tend to bloom too early in spring can be delayed as much as two weeks by applying a mulch to the soil surface as soon as the ground is thoroughly frozen. For best results, use a mulch material that is coarse and does not tend to cake or compact. One of the best is wood or bark chips. These can be applied to a depth of 4 or 5 inches over the root zone of the plants or, in the case of early bulbs, over the entire flower bed. The mulch acts as an insulation to prevent an early thaw of the soil. The mulch will also reduce water loss from the soil and thus reduce the need for supplemental watering during "open", dry periods in February and March.

HOUSE PLANTS

Now that cold weather is here and our home furnaces are fired up, it is a good idea to watch your house plants carefully. Usually, the humidity in the home drops drastically when the furnace comes on, particularly if you have forced-air heat. At this time of year, sunlight is of shorter duration although it can be just as intense in early morning and late afternoon. The reduced light tends to reduce the demands of a plant for water, the reduced humidity will increase water demands. In a sense, house plants become "confused" and begin to develop problems such as leaf drop and browning of the leaf margins. To avoid this, try gradually reducing the frequency of watering to help "harden" the plants. When you do water, however, apply water liberally so that a quantity will flow out of the drainage holes in the bottom of the pot. This surplus water should be discarded to avoid it being drawn back into the pot and thus reduce chances of soluble salt accumulation. (The white crust seen on the soil top and along the pot rim.) Most important is to avoid overwatering (too frequent) and keep house plants away from heaters and cold drafts.

Reminder: Now is a good time to clean up elmwood debris. All elm wood having bark attached should be destroyed before spring to avoid emergency of the elm bark beetle, carrier of Dutch elm disease.

Dr. James Feucht

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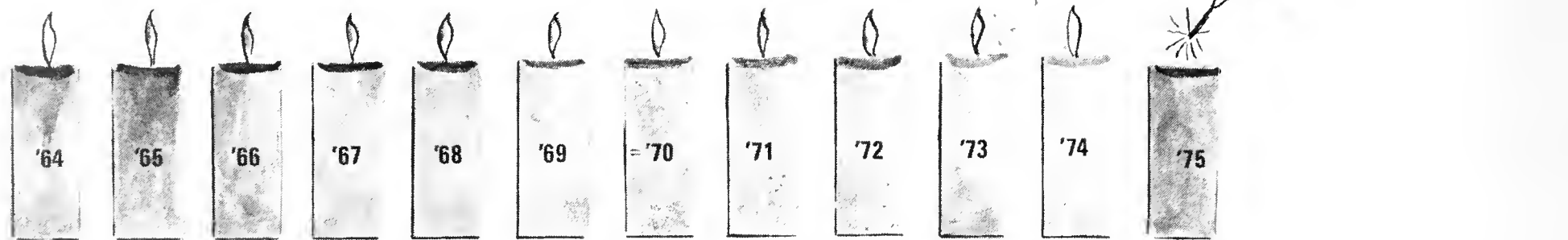
Dr. Miriam Denham will be offering an *Intensive Course in Botany* in winter. This Denver Public School course, to be taught at the Denver Botanic Gardens, is specifically designed to help in the training of non-botanist teachers. The classes will start on Monday, January 12, from 4 to 6:30 p.m., Classroom B.

Some topics to be covered in the 10-week session include: Use of the microscope, preparation of fresh plant materials, and the use of prepared slides to examine plant cell types and tissues; flowering plant organs; vegetative and reproductive structures; brief survey of the plant kingdom; basis life processes: effects of light and nutrients needed for growth; propagation with examples of easily grown plants for demonstration of principles.

A total of two hours graduate credit will be given. For further information, call Dr. John Brennan, 266-2255, Ext. 488.

Christmas Sale

November 21-22



It's the twelfth year of Christmas for Botanic Gardens Gift Shop as volunteers prepare for their annual pre-Christmas sale Nov. 21 and 22 in Boettcher Memorial Center, 1005 York Street. Sponsored by Associates of Denver Botanic Gardens the sale will be held from 10 a.m. to 4:30 p.m. each day.

Bedecked with festive handcrafted treasures, yuletide gifts, zesty gourmet treats and botanical harvests Horticulture Hall, the Gift Shop near the Conservatory and the Lobby Court emerge as Holiday Mall for discriminating shoppers, happy that a gift *from* the Gardens is a gift *to* the Gardens.

Ornamentally, pine-scented angels, wreaths and Christmas trees have been fashioned of cheery calico by members of the potpourri workshop while miniature bird feeders are the creation of arts and crafts workshop volunteers. The exotic jewel-studded stars-over-Persia that adorned last year's holiday decor will be offered — it's traditional and they're sensational! Birds or ponies in merry felts, handpainted angels in soft pastel, tiny cornhusk figurines and wooden drummer boys will be among the variety of trim-the-tree items.

Holiday Treasures include one-of-a-kind heritage wreaths, table pieces, dainty wreaths of seeds and cones for candle rings or wall hangings, framed miniature floral arrangements for desk or dresser.

Fragrance Gifts. Gardenia, a new fragrance, will be introduced to the Shop's repertory of potpourri in domed glass or brass and glass containers, sachets and tranquility pillows. Bulk potpourri will be available only in rose fragrance. Here, too, will be found pomander kits, fruit or floral scented glycerine soap as well as traditional frankincense and myrrh.

Gift That Grows. Pots of Cymbidium orchids to start an orchid fancier on his way or to enhance a modest Wardian case, will be for sale.

Herb Vinegar and tarragon vinegar are cherished gifts for culinary enthusiasts. Brewed from a generations-old recipe by members of Botanic Gardens Guild, tasty vinegars have earned the funds to plan, plant, develop and expand the Guild's nationally-known herb garden, an integral segment of our Gardens' landscape plan.

Other Gourmet Gifts include herb salt, vanilla beans, cinnamon sticks in addition to mugs, pitchers, teapots, casseroles and bowls with herb or floral design, decorative linen towels and hot pot holders, placemats, tiles and fun-and-fancy serving dishes — ceramic celery, carrots, asparagus or peas.

Children's Gifts. Suggested are calico-critter jump ropes, a hardwood doll that swims and an acrobatic bear, friction toys and Aunt Pettitoes, the newest addition to a complete Beatrix Potter collection. Potter books are now available in paperback as well as hardcover editions. A series of German fairytale figures will be found in natural wood finish. Whimsical turtles and planters resembling caterpillars, snails and kittens would cheer an adult or youngster.

Jewelry. Unusual seeds, beads and clay medallions with nature patterns have been fashioned into neckpieces, bracelets and earrings. Ghost beads of juniper berries are made by Navajos living near Bluff, Utah. Other items have been chosen in petit point — rings, manicure and sewing sets. Picture frames, pill boxes, pendants and brooches will be available in mosaic. A centennial aspen pendant in gold and the traditional aspen pins, earrings and tie tacks in gold, silver or lucite will be featured.

For Men or Office. Laser-engraved walnut desk accessories such as pencil holders, business card dispensers and paper weights; ceramic humidors, letter holders and smoker sets with gamebird designs; stone boxes with inlaid floral patterns; lucite paper weights incorporating natural materials and exquisite Kashmir containers would be appropriate.

Books. More than 400 titles suggest volumes for the very young as *A is for Annabelle* and *I is One* by Tasha Tudor; *The Life of Marshes, Fishes* or other subjects in the Natures Way series; Pesman's *Meet the Natives* for amateur wildflower botanists to Harrington's *Manual of Colorado Plants* for the serious scientist. *Plans, Parks and People*, a history of Denver's Parks and landscapes as told by S. R. DeBoer as well as *Vegetable Gardening* for inflation-weary families are both special issues of *The Green Thumb* and excellent stocking stuffers. Books about ornamental plant designs for needlepoint and books on dyeing with plants would delight creative stitchers.

Stationery and Calendars. The Junior League's calendar, *Colorado — Then and Now*, historical sketches in sepia tones and *Colorado in Color*, a centennial calendar, will be available. Note papers with botanical themes, decorative seals of wildflowers and others of birds are inexpensive items. A flower card game as well as bridge and playing cards featuring 54 identified birds will be offered at the sale.

Gifts for Garden or Lanai are copper fountains, contemporary in design, for indoors or out; planters in ceramic and pottery in matte finish or glossy sheen; wicker plant stands; windchimes of brass, wood or lucite; ceramic friendship pots to brighten a window garden.

Classic Accessories, gifts for home, have been selected from near and far: Peking glass trees, Simi stone figures from Holland; Venetian glass; Limoge drawer pulls and switch-plates; scenic cork carvings from India; quaint wall plaques from St. Andrews Priory (biblical figures in muted tones); cachepots, bowls and boxes in shell design; sliced minerals with tiny 14 karat figures; St. Francis in many sizes and finishes; birds, butterflies and animals in alabaster, bisque, ceramic or wood; leaded European stained glass in one-of-a-kind designs.

Do-It-Yourself Yuletide Gifts. Cones, pods and dried natural materials have been assembled by members of Around the Seasons Club for their annual project. Plumed cockscomb, moneyplant, teasel, pampas grass are a few of many offerings for flower arrangers; sweet gum balls, acorns and chestnuts are sought-after supplies for craftsmen.

Again, a gift *from* the Gardens is a gift *to* the Gardens, for all proceeds from this annual event benefit Denver Botanic Gardens.

One more thing to remember is a membership in the Gardens. The Gardens are open every day of the year (except Christmas Day and New Year's Day), and the hours are listed below:

The Boettcher Memorial Conservatory: 9 a.m. to 5 p.m. daily
The Helen Fowler Library:

9 a.m. to 5 p.m. Monday through Saturday

1 p.m. to 5 p.m. Sunday

The Herbarium Display Area: 9 a.m. to 5 p.m. daily

The Herbarium: 9 a.m. to 3 p.m. on Tuesday,
or by appointment

The Gift Shop:

10 a.m. to 4 p.m. Monday through Saturday

11 a.m. to 4 p.m. Sunday

The Denver Botanic Gardens consists of three units: The York Street Unit; the Montane Unit on Bear Creek, above Evergreen; and the Alpine Unit on Mount Goliath. Each offers, in season, a different display of plant materials.

The Helen Fowler Library offers many books on botany, horticulture and related subjects, as well as periodicals. The needs of gardeners of every level have been considered. Circulation is limited to members.

Members receive *The Green Thumb* quarterly magazine and the monthly *Green Thumb Newsletter* carrying announcements of varied and interesting activities. A Schedule of Education Courses will be mailed to all members, listing free classes and those in which members may enroll at a discount.

Those of you who attended Miss Kasumi Teshigahara's Ikebana demonstration and workshop know what a treat it was to watch a real artist at work. Visitors came from San Francisco, Portland, Conroe and Dallas and of course from many areas in Colorado to learn from her.

Students who wish to learn more about this oriental art form, may be interested to know that several different schools of Ikebana are taught in the Denver area. For further information as to teachers and locations, please call Mrs. Jean Blackledge, 756-7242.

"The Redwoods," the beautiful and majestic giants of the forests, will be featured on November 8 at 1:30 in Classroom C. This twenty-minute color film made by the Sierra Club has won International honors including the Academy Award. Free.

November Classes

A slight change has become necessary in the class listing for Mr. Hannigan, who was to teach the *House Plant* classes, is out of town. Mr. Dave Lankhorst, who worked in the Conservatory prior to his retirement, and Dr. Helen Zeiner, Chairman of the Herbarium Committee, will replace him. Mr. Lankhorst will teach the Monday class, November 3-24, 10 to noon and Dr. Zeiner, the Wednesday one, November 5-26, also 10 to noon — Room A. The cost is \$10.00 for members and \$15.00 for non-members. As of this writing each class shows twelve enrolled so do not delay too long in signing up. Limit 25 in each.

And a sneak preview of the *Winter List of Classes* shows a *Tour of the Applewood Seed Company* in early December; *Botany for non-Majors* in conjunction with Metropolitan State College, starting on January 6, and two *Hobby Greenhouse Management* classes. Watch for these and much more — coming soon.

The editor is extremely sorry that Mr. George Cranmer's name was misspelled in the Autumn issue of the Green Thumb Magazine. Our deepest apologies.

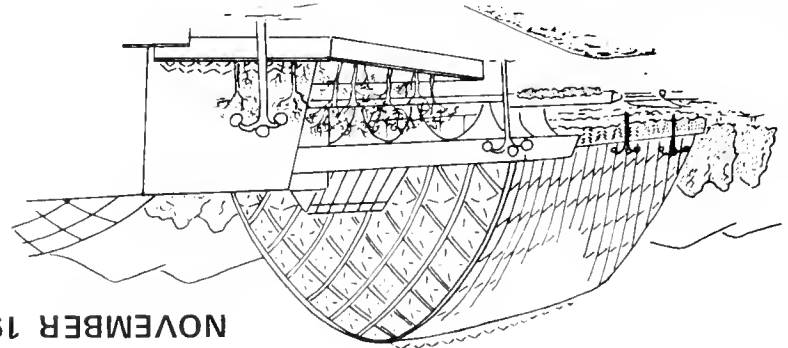
ANIMAL EATERS CAGED AT THE GARDENS

Plants eat animals, you know. At least, some of them do. And we have those kind of plants at Denver Botanic Gardens. You can see these carnivorous plants, at any time, in a large display case on the balcony above the entrance to the Conservatory.

There are some twenty plants in the case, all strange, unusual and fascinating. Perhaps the best known of the animal eaters is the Venus Fly-trap, *Dionaea muscipula*, a modified leaf which produces inviting nectar along its inner surface. Insects which are lured into the trap, if large enough, brush bristly trichomes which trigger the trap. On closing the cilia which line the leaf edges intertwine like the fingers of clasped hands, preventing the victim's escape, but allowing tiny bugs to wriggle free. The leaf gradually tightens its hold and begins secreting digestive enzymes; the process may take 8 or 10 days. Linnaeus called this plant *miraculum naturae*.

Other captive carnivores in the case are the Sundews, *Drosera tracyi*, *D. filiformis* and *D. intermedia*, from the gulf and eastern coasts of the U.S.; the Cobra Lily, *Darlingtonia californica*, from the west coast; the Pitcher Plants, *Sarracenia minor* the dwarf, *S. alata* — winged, *S. rubra* — red, *S. purpurea* — purple, and *S. psittacina* — parrot-leaved, all from the southern part of our east coast. Two foreigners are included, a pitcher plant, *Nepenthes x superba*, from Malasia, and the Common Bladderwort, *Utricularia vulgaris*, from Eurasia.

All but one of the above are bulbs and must be kept in cold storage during dormancy for two or three months each year. The Botanic Gardens case is kept at room temperature; in a greenhouse the plants should be grown at 60 degrees. The soil mixture in the case is one-third acid peat moss, one-third sphagnum moss, and one-third coarse sand. Distilled water is used for moistening and the case holds the moisture well. Light is furnished by three fluorescent lamps which burn about 15 hours per day. It isn't necessary to furnish meat for the carnivores. No chemicals are ever used on these plants, neither sprays or fertilizers. The green cover around the plants is *Selaginella*, an interesting plant in its own right.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206

NOVEMBER 1975

Non-Profit Org.
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Permit No. 205
Denver, Colorado

Thank you N.F.I.!

The Netherlands Flower Bulb Institute, Inc. has recently written the Denver Botanic Gardens to say that they will be shipping more of their fine quality bulbs for our spring display. Besides fifty varieties of tulips and 3200 *Narcissus* bulbs, 1200 *Muscari* are coming as are the following varieties of hyacinths:

1200 Bismarck	400 Amsterdam
400 Delft Blue	800 Jan Bos
2000 Blue Jacket	800 Pink Pearl
1200 Carnegie	400 Princess Margaret
2000 L'Innocence	



Memorial gifts have been received in remembrance of:

Mr. Brown W. Cannon
Mrs. Mary Grant Coors

The Board of Trustees is pleased to announce the election of the following new members:

Mr. Newell Grant
Mrs. Richard W. Hanselman
Mrs. Norman F. Patrick

You must see the massed blooms in the Lobby Court this month! Eight centuries ago in China, Fan Cheng-Ta wrote:

And now the Day of Double Brightness comes,
With Autumn's festal flowers, chrysanthemums

.....
Night long endures the unexpected frost,
A sign that autumn nears her end at last:
The woods, where yesterday only greenness was,
Wear now a richly-embroidered silken dress.
Here in my orange-garden's secret air,
Another transformation is astir:
Hidden among the leaves of emerald
Ten Thousand golden spheres are safe in fold.

To make this display, requires months of work. The plants were ordered in winter, grown in the greenhouses all summer where they were heavily fertilized and pinched and shaped repeatedly. Some were grown on frames and others in hanging baskets or pots; some also underwent bonsai training. The work continued into the fall when they were carefully shaded, for chrysanthemums are a light sensitive plant.

Look for the myriad varieties of color and shade as well as such types of flower form as spider, spoon, exhibition incurve, reflex, pom pom, and saga.

Come during the Christmas Sale, of course, but since we usually have such large crowds then, it might be wise to choose another more peaceful time to view the chrysanthemums.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR DECEMBER

Selecting a Christmas tree is hardly considered gardening but then if you plan to use a live tree, it would certainly involve some gardening. In recent years there has been an increase in interest in using live Christmas trees; that is, spruce, pine and fir purchased in bushel baskets, then used as Christmas trees to be later planted in the yard. This practice has been promoted by some in the interest of ecology but let's take a look at how really ecological it is. In the first place, the cut trees that you buy should not be considered a waste of natural resources. Many are grown by Christmas tree growers as their livelihood and used only for that purpose. Others are cut as a thinning operation in our natural forests. Thinning is a necessary practice in our forests to promote healthier tree stands.

Using a live tree and planting it in your yard may sound like a good idea but unfortunately, statistics have shown that only a small portion of these trees survive after they have been planted out in the yard. One of the difficulties is that the tree is held in a warm location for a week or more and this sometimes causes the plant to come out of its natural dormancy, making it vulnerable to cold temperatures when placed out of doors. Another problem is that the trees are often allowed to become too dry and the root system is frequently disturbed more than usual because of the extra handling in moving it indoors and out.

If you are planning to buy a live tree this year, you should prepare the planting site now before the garden freezes and save the backfill soil in a location where it will not freeze. The hole should be dug and covered with boards to keep someone from falling into it until the tree is planted out.

Most of the trees purchased will be in bushel baskets. They should be kept moist and in a cool location such as a garage, until shortly before Christmas time. It is best to keep the tree indoors for not more than 3 days. That is, the day before, the day of, and the day after Christmas. After that time, take the tree to a shaded outdoor location or plant it directly in the planting site if the weather permits. Avoid planting the tree out during subzero weather. After placing the tree in the hole, break the rims of the basket and remove all but the bottom. After planting the tree, it should be watered in and a mulching material such as woodchips should be applied to a depth of 6 inches.

If you are planning to use a cut tree, try to find the freshest tree available in order to reduce fire hazards. Douglas fir, true firs such as Concolor, will hold their needles very well but it's best to avoid spruce because they are prone to early needle-drop, they create a fire hazard and they make a mess that is difficult to clean up in the house.

When selecting your tree, one way to tell its freshness is to thump the tree on the ground several times and watch for needles to drop. If only a few drop off, it is probably a pretty fresh tree. If you purchase your tree several days before you plan to take it indoors, submerge the base in a bucket of water, after first making a fresh cut several inches back from the old stub. Keep the tree in a shaded area.

Caring for your Poinsettia

The poinsettia is a popular plant this time of year because it is a traditional flower for the Christmas season. Actually, the use of poinsettias for the Christmas celebration is not a recent custom because it dates back as far as the 17th Century. The Franciscan priests are considered the first to use them for the Christmas celebration in the nativity procession, Fiesta of Pesebre.

The poinsettia is native to Mexico, first cultivated by the Aztecs. It was introduced into the U.S. by our first ambassador to Mexico, Joel Roberts Poinsett. Thus the name was given to this plant in this country. The Aztecs gave it a much more complicated name: Cuetlaxochitl.

Poinsett sent some of the plants to his home in Greenville, S.C. in 1825. Its popularity gained ever since, particularly with the development of improved varieties, largely the responsibility of Robert Ecke, a family of poinsettia growers and hybridizers who are still the major producers in the U.S. today.

The Ecke family, over the years, has developed poinsettias other than the traditional red. It is now possible to purchase white, pink and one close to chartreuse.

Actually, the colors of poinsettias are not the result of the flowers themselves. The colorful portions, which may be confused as petals, are actually modified leaves called bracts. The real flowers are rather inconspicuous yellow-green buttons in the center of the bracts.

Being a member of the spurge family, a group which characteristically produces a white, latex-like juice, the poinsettia has gained a reputation for being poisonous. Apparently, some of the original varieties were, but recent research has shown that the toxin present in poinsettias, if at all, are no cause for worry as a house plant.

If properly cared for, poinsettias will last well through the Christmas season and can even be sustained long enough to plant in the yard in the spring. In the home they should be kept in a bright spot but not in direct sunlight. Avoid drafty areas such as doorways but keep them away from heaters and other sources of heat including the top of a TV set. Poinsettias will perform best if kept on the dry side. Let them go to the point where the soil feels dry to a depth of one-half inch.

Water enough so that the water runs out of the drainage hole at the bottom of the pot. Any water that collects in the basin beneath the drainage hole should be discarded. This will prevent the surplus water, which usually contains dissolved salts, from being drawn back into the pot. The dissolved salts will injure poinsettias. Ideal temperatures for poinsettias are 68 degrees F. to 62 degrees F. at night.

Merry Christmas and A Happy New Year!

Dr. J. R. Feucht

A 30-Minute color film produced by the Colonial Williamsburg Foundation on the *Flower Arrangements of Williamsburg* will be shown on December 13 at 1:30 p.m. in Classroom C.



Merry Christmas and Happy New Year to all from the staff of the Denver Botanic Gardens.

DECEMBER CLASSES

Thinking about enrolling in the Guides Class in January but wondering how the tours are handled? Join one and see. Some scheduled groups are on December 1 and 3 at 10:30 a.m., both for 5th Graders and on December 8 at 10:30 a.m. for 4th Grade. Meet the group in the lobby of the Conservatory.

Remember the *Tour to Applewood Seed Company* on December 2. Those who wish may meet at 9 a.m. at 909 York Street, or if you live on the west side, you may prefer to go directly to 833 Parfet. Turn north off 6th Ave. at Simms, go one block to 8th and turn east to Parfet Street. There is a large complex on the northwest corner — follow the Applewood sign to the west side of that building. Free, but limited to the first twenty people who call in.

Children who enroll in the *Christmas Swags* class will be able to contribute something made by themselves to their own family. We need the registrations early so that we may provide the correct amount of greens, ribbons and other trimmings so don't delay. The class will be held on December 6 at 9 a.m. in Classroom B. Cost \$2.50. Limit 17. Ages 12 through 16, please.

Another free class, *Traditions of Plants of the Holiday Season* will help get us all in the mood. Holly, the chief plant emblem of Christmas, has been mentioned in many superstitions since the time of Saturnalia. Poinsettia and mistletoe are also prominent plants used at this season. All welcome at 10 a.m., December 9, Classroom A.

In the *Natural History of Selborne* you will find:

"The standing objection to botany has always been that it is a pursuit that amuses the fancy and exercises the memory, without improving the mind or advancing any real knowledge; and where the science is carried no farther than the mere systematic classification, the charge is but too true. But the botanist that is desirous of wiping off this aspersion should be by no means content with a list of names; he should study plants philosophically, should investigate the laws of vegetation, should examine the powers and virtues of efficacious herbs, should promote their cultivation; and graft the gardener, the planter, and the husbandman, on the phytologist. Not that system is by any means to be thrown aside; without system the field of nature would be a pathless wilderness; the system should be subservient to, not the main object of, pursuit."

Enroll in Carol Steele's class, *General Botany for non-Majors* and see how well she follows White's admonition. The class will be from January 6 to March 11 from 1:20 - 2:50 p.m., Tuesdays and 1:20 - 5:10 p.m. Thursdays. For college credit, call 292-5190, Ext. 246, or for no credit and information on cost, call 297-2547. Limit 15 students.

First Announcement

The Denver Botanic Gardens is pleased to announce a three week trip to Great Britain in 1976. Plans are now underway to depart on May 23rd and to spend 22 days touring England and Scotland.

The famous gardens of Kew, Wisley and the Royal Botanic Garden in Edinburgh are on the list and of course the group will also attend the Chelsea Flower Show.

A mailing will be sent to all the membership with more information in the very near future.

THANKS AGAIN.

A grand time was had by all at The Associates Annual Meeting. The volunteers who attended heard interesting reports, ate good food and enjoyed a fascinating program. (By the way, Charles Marden Fitch's newest book, *The Complete Book of Houseplants Under Lights*, is now available in the Gift Shop.)

Recognition was given to the many volunteers who have donated hours of their time to the Denver Botanic Gardens.

500 HOUR PINS

Frances Carswell	Gift Shop	511
Laura Dawson	Gift Shop	508
Madeleine Gately	Library	617
Betty Gilliom	Gift Shop	785
Bernice Jacobs	Gift Shop	502
Jean Kellogg	Gift Shop	595½
Peg Milroy	Library	619
Margaret Polak	Library	557
Lucille Pollard	Library	522
Mary Taylor	Library	524
Frances Warden	Library	580
Charlotte Wendell	Guide & Hostess Desk	636

1,000 HOUR PINS

Geneva Eldridge	Library	1,075
Gloria Falkenberg	Gift Shop	1,016
Marie Hyland	Gift Shop	1,053
Bernice Millard	Library	1,210

Thanks again, and thanks, too, to all who worked so hard to make the Christmas Sale the success it was.

**DENVER BOTANIC GARDENS
CALENDAR OF EVENTS
DECEMBER, 1975**

DECEMBER

2)*	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
2)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
2)	7:30 p.m.	Education Building — Lecture Room "C"	Denver Audubon Society
2)	7:30 p.m.	Education Building — Horticulture Hall Rooms "A" & "B"	Neighborhood Crime Prevention Day
3)*	9:30 a.m.	Education Building — Lecture Room "C"	Gardener Training Program "Flower Beds" — Mr. Ron McKenzie
4)	7:30 p.m.	Education Building — Lecture Room "C"	Colorado Open Space Council (Board Meeting)
4)*	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society
5)	11:00 a.m.	Botanic Gardens House — Main - Dining & Kitchen	Civic Garden Club
6)*	9:00 a.m.	Education Building — Lecture Room "B"	Christmas Swags — Mrs. Audrey Stites (Students age 12 thru 16 - Limit 17)
6)	9:30 a.m.	Education Building — Lecture Room "A"	Nature Conservancy
		★ ★ ★ ★ ★ ★ ★ ★	★ ★
8)	7:30 p.m.	Botanic Gardens House — Main Room	Sierra Club (Wildlife Workshop)
9)*	9:30 a.m.	Education Building — Lecture Room "B"	Civic Garden Club — Division "C"
9)	10:00 a.m.	Education Building — Lecture Room "A"	Traditions of Plants of the Holiday Season Dr. James Jackson
9)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
9)	7:00 p.m.	Education Building — Lecture Room "B"	House Plant Class — Dave Woodward (For information call Denver Free University — 832-6688)
9)*	7:30 p.m.	Education Building — Lecture Room "A"	Swingle Study Group
10)	8:30 a.m.	Education Building — Horticulture Hall	Landscape Management Workshop
10)*	9:30 a.m.	Education Building — Lecture Room "C"	Gardener Training — Refresher Course
10)	7:30 p.m.	Education Building — Lecture Room "C"	Colorado Open Space Council Wilderness Workshop
10)*	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
11)*	3:30 p.m.	Botanic Gardens House — Dining Room	Development & Public Relations Meeting
12)*	6:30 p.m.	Education Building — Horticulture Hall	Parks & Recreation Christmas Party
12)	7:30 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Denver Dahlia Society
13)	10:00 a.m.	Education Building — Lecture Room "B"	Colorado Organic Grower's & Marketer's Association
13)	1:30 p.m.	Education Building — Lecture Room "C"	Film: "Flower Arrangements of Williamsburg"
13)*	6:00 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Colorado Bonsai Club
		★ ★ ★ ★ ★ ★ ★ ★	★ ★
16)	7:00 p.m.	Education Building — Lecture Room "B"	House Plant Class — Dave Woodward (For information call Denver Free University — 832-6688)

CALENDAR OF EVENTS FOR DECEMBER (Continued)

DECEMBER

17)*	9:30 a.m.	Education Building – Lecture Room “C”	Gardener Florists Refresher Course “Watering”
17)	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Open Space Council (Air Quality Workshop)
17)*	7:30 p.m.	Botanic Gardens House – Main - Dining & Kitchen	Men’s Garden Club
18)*	10:00 a.m.	Botanic Gardens House – Main - Dining & Kitchen	Around the Seasons Christmas Party
18)*	6:30 p.m.	Botanic Gardens House – Main Room	Colorado Chapter of American Society of Landscape Architects
18)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Gardening Club of Denver
		★ ★ ★ ★ ★ ★ ★ ★	★ ★
23)	7:00 p.m.	Education Building – Lecture Room “B”	House Plant Class – Dave Woodward (For information call Denver Free University – 832-6688

M E R R Y C H R I S T M A S !

&

H A P P Y N E W Y E A R !

1976

JANUARY

3)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers
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**Members or enrollees only.*

Finished with your Christmas shopping — taken care of everyone on your list? What about a present to the Denver Botanic Gardens? If you participate in Midland Federal Savings *Save and Share Program* that is what you may do. When you open a savings account at Midland, or when you add to an existing account, they will send a check to the charity of your choice. Regulations permit Midland Federal Savings to send donations in amounts shown below to any charity recognized by the Internal Revenue Service. Payment is made by check with your name as donor.

Amount of Deposit	Amount of Gift to Charity
\$ 250.00	\$ 2.50
1,000.00	5.00
5,000.00	10.00

Midland will also make a donation of its own to the same charity.

LONGWOOD GARDENS PLANT MATERIALS SUMMER LABORATORY

College students throughout America, majoring in the Plant Sciences and particularly in horticulture, have an unusual opportunity to gain practical work experience in the field of ornamental horticulture in a special summer program conducted each year at Longwood Gardens, Kennett Square, Chester County, Pennsylvania. This program is sponsored jointly by Longwood Gardens and the University of Delaware at Newark, Delaware.

Longwood Gardens, operated by the non-profit, philanthropic Longwood Foundation, Inc., is one of the outstanding gardens of America. With extensive greenhouse facilities, as well as outdoor plantings, it features year round displays of superbly grown horticultural materials.

Students participating in the 10-week program are employed for the summer by Longwood Gardens, but are enrolled for purposes of obtaining college credit through the Department of Plant Science of the University of Delaware. During the course of the summer, students are assigned work for periods of a week or two in each principal horticultural location at Longwood Gardens, including the displays in the main greenhouses and experimental greenhouses, the nursery and the perennial, annual and vegetable gardens. In addition, students are required to attend a series of lectures on practical horticultural subjects by members of the staffs of Longwood Gardens and the University of Delaware. They also participate in a weekly session on identification of more unusual plant materials grown at the Gardens. A final written report is required of each participant at the end of the summer. This course carries three college credits from the University of Delaware.

Students accepted and enrolled in the Longwood Gardens Summer Program work a 35-hour week for which they receive an hourly wage of \$2.00. Rooms are available at the Gardens for male and female students at \$35.00 per month. No meals are served at the Gardens, but are available close by.

Because of limited enrollment, only outstanding students will be selected for this program. Selection of candidates will be on the basis of recommendations of advisors, stated objectives in the field of horticulture and class (seniors and juniors being given preference over lower classmen). Formal applications in writing, accompanied by a copy of their college transcript must be received by February 1 of any year, at the Department of Plant Science, University of Delaware, Newark, Delaware, 19711.

SILVER AWARD RECEIVED AT THE ORCHID SHOW

The Denver Botanic Gardens was awarded a silver tray and goblets set for the best Educational Exhibit in the Southwest Regional Orchid Growers Association show held in Denver October 8-11. Orchid species were used from the collection which has been gathered over a number of years and included many varieties which had been collected by Mr. and Mrs. William Thurston on trips to Mexico and donated to the Gardens.



D.E.D. UPDATE

The Colorado State Forest Service has again conducted a survey of infected trees in the Denver area. Dutch elm disease is on the decline this year when compared to last year's figures.

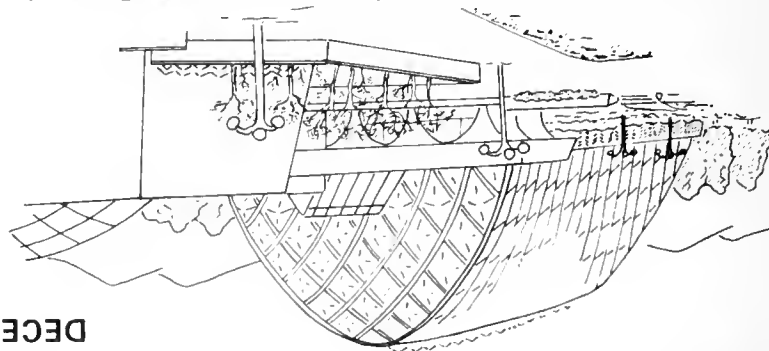
Total diseased or dead trees in Denver for 1975 is two thousand as compared to six thousand in 1974. The survey showed that in Adams and Arapahoe Counties 579 diseased trees were located, resulting in a total of 2,579 diseased trees.

Several factors account for the decline. Homeowner desire to remove diseased trees promptly is the main factor. The dry winter, unusual spring and summer weather conditions are also contributing factors.

Now is the time to remove those dead and diseased trees. If all dead and diseased trees are removed by next spring, Denver area residents can expect a further decline in the disease in 1976.

And, according to *The Avant Gardener* of March 1975, a promising new hybrid elm which is resistant to D.E.D. is being developed. This cross of *Ulmus hollandica* var. *vegeta* and *U. carpinifolia* grows rapidly in a wide range of soils, tolerates drought, pollution, soil compaction and restricted roots. It has dark green foliage, grows 60 to 80 feet and has an upright branching form with a dense compact crown.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



DECEMBER 1975

NEW GARDEN FOR THE CENTENNIAL YEAR

The Denver Botanic Gardens are proud to announce a new addition to their old and treasured herb garden. The beautifully designed new garden contains a memorial sundial dedicated to Persis M. Owen, who designed the original herb garden in 1964. The Gardens are pleased to give such recognition to a person of her abilities and skills.

The herb garden is a self-sustained unit of the Gardens, created and financed by Denver Botanic Gardens Guild, by their work in the garden and by revenue-raising garden tours in July and the sale of enormous amounts of herb vinegar at the Christmas Sale on November 21 and 22.

The new addition was begun in 1972 with Jane Silverstein Reis heading the planning and development work at the garden. A drinking fountain and brick walkways have been installed and a large arbor and benches are to be installed as the third phase of the addition.

Development of the new garden is to provide more room for those herbs, found throughout the entire world, which have specific uses for culinary or medicinal purposes. Some of the varieties are: The beautifully scented geraniums with the sweetest of fragrances; three varieties of Basil and even more than that of Thyme; the exciting scent of pineapple mint with its overlay of pineapple on a background of mint.

Among medicinal herbs is feverfew, usually a difficult plant to track down. It's growing in our garden. Feverfew, *Chrysanthemum parthenium*, has uses as a warm infusion for indigestion, colds, and even alcoholic d.t.'s. As a cold extract, it may be used as a form of tonic. Another one, Blood Root, *Sanguinaria canadensis*, is a small perennial herb about six inches in height found in damp, rich soils. This herb has uses as a sedative, stimulant and tonic. It also may be used externally on sores and other skin problems. The wrong dosage may be fatal.

Remember to say it "erb", not "herb".

Dan Brownson



HIGH SCHOOL INTERN AT THE GARDENS

There is a new face among the crowd here at the Gardens. It belongs to Daniel Brownson, who is here because of the Denver Public School Executive Internship Program. This program is geared toward students working in the community and allows them to test their interests and participate in a full working day, four days a week. Then on Fridays, Dan either has seminars with the other interns or attends meetings at his own home school, East High. This program is most beneficial for students and gives them a head start in the occupation of their choice. Dan reports he has both enjoyed and learned a great deal with the help of the entire crew at the Gardens and he is looking forward to the months to come.



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GARDENING TIPS FOR JANUARY, 1976!

In this Centennial year, we will see many special efforts by city park departments, institutions and private organizations to construct "Centennial Gardens". Already underway are plans for red, white and blue flag gardens and similar patriotic designs for public display. There is no reason why the home gardener cannot have a centennial display to enjoy in the home grounds as well. With a little planning and some careful selection of varieties of annuals, the red, white and blue combination can be realized in a showy flower border.

One of the tricks is to select annuals that will start blooming at the same time and continue to have a steady bloom all season. Petunias come to mind but there still isn't a really blue petunia on the market — tho 'Blue Skies' and 'Sky Magic' come close enough unless you are trying to be a perfectionist. The tried and true variety 'El Toro' and 'Red Cascade', as well as 'White Cascade' and 'Snow Cloud' provide the other two colors.

There's no need to make a complicated design like the American flag but it usually is a good idea to put your own design on paper first. Use graph paper so that you can more readily do it to scale and this will also make it easier to determine the number of each type you will need.

Some other ideas for the patriotic display include the 'Blue Mink' variety of ageratum and its white companion 'Summer Snow' or the blue (nearly so) and white varieties of alyssum (*Lobularia*). These low, edging plants can be nicely used in combination with taller, red petunias, the brilliant, red dwarf forms of cockscomb such as *Celosia* 'Fire Glow' or the 'Blaze' variety of *Verbena venosa*.

It is often difficult to find just the exact colors and varieties of annuals at any one garden center so why not try growing your own? Now is a good time to thumb through the seed catalogues and select the varieties you need and to prepare for growing them indoors for an early start.

One of the biggest difficulties in growing annuals indoors is securing adequate light. With insufficient light the seedlings become thin and "leggy", resulting in weak plants which will rarely stand transplanting well. One solution is to use artificial lights.

There are several commercial types of indoor lighting shelves or trays available, but if you are planning to grow annual bedding plants, avoid those with lights that cannot be adjusted for height above the plants. Many commercial types are designed for African violets with fixed lighting assemblies. African violets need only 300-600 foot candles to flourish, thus the distance of the lights to the plants is not usually as critical as in annuals which require 1000 foot candles or more.

The most versatile lighting arrangement has fluorescent tubes suspended by chains that will allow adjustment of the space between plants and light source as the plants grow. With annuals, the lights will need to be as close as four inches from the seedlings. (A pair of 40-watt fluorescent tubes will yield 600-1000 foot candles at 4 inches when tubes are new.)

While incandescent bulbs give off more light from the same wattage as fluorescent, they create too much heat to be placed close to the plants. Despite some claims, it is also

best to use "cool white" fluorescent rather than the pink "Gro-lux" type. Research has shown that while the pink tubes yield the proper light quality (in the red part of the spectrum) it is at the expense of the light intensity.

Don't be in a rush to start your annual bedding plants, however. Set up the lights now and be content with indoor foliage plants. Wait for starting annuals until March, at the earliest. Otherwise, they will literally "grow you out of house and home"!

After Christmas Care of Poinsettias.

Each year I receive numerous calls shortly after Christmas to advise on the care of a poinsettia in the home. Sometimes the caller is concerned because the plant is already dropping its leaves. Until a relatively few years ago, the advice would go something like this . . . "Keep the plant on the dry side, watering only when the soil is quite dry to touch, even 2 - 3 inches into the soil surface. Keep in cool spot. Enjoy colorful bracts even without foliage and when these fade — toss it out. You can try to start it over again but the results rarely produce a spectacular show the second time." Now, with the new varieties on the market, this advice is out-moded.

Perhaps you've noticed in the past few years that your poinsettias seemed to last on even into early spring. This is no accident or a case of rare individual plants here or there having exceptional qualities, but rather the result of intensive selection and breeding done principally by Dr. Robert N. Stewart, USDA Research Horticulturist, Beltsville, Maryland, and Mr. Paul Ecke, poinsettia grower in California. Actually, much of the "breeding" has been selection and vegetative propagation (rooting cuttings) of mutations. As a result you can obtain shades of pink, white, and even speckled types.

More important has been the development of plants with short, stout stems, large bracts (the actual showy part which are modified leaves containing pigments called anthocyanin) and a remarkable lasting quality.

The new advice on poinsettia care now goes something like this "Water plants about every 4 days. Soon, new side shoots will appear. Repot to a larger container in March or April. Continue to water, adding houseplant fertilizer such as fish emulsion about every other week. Move plant to a semi-shaded location out-of-doors for the summer. (After June 1.) To make it easier to handle, simply plunge pot into garden soil. Before frost in fall, lift plant and pot and bring indoors. (By now it is more a bush than a small pot plant.) Keep plant in *total darkness* 14 hours each day and in coolest part of the house (65 degrees F. is best. Try the basement or crawl space.). When the bracts begin to show color, bring them to the room you wish for display. You should have a colorful array of bracts before and during Christmas. You can continue this process each year on the same plant until it outgrows your living room!"

As the plant gets larger, some pruning may be necessary. Keep the prunings and root them for new plants. An easy way is to take 6-8 inch stem pieces. Remove foliage on the lower 2-3 inches. Place clean, moist sand in the bottom half of large plastic bags (quart size or larger). Plunge base of

(Continued on back page)

Greetings From the Director

This message brings greetings and sincerest New Year wishes for 1976 to all of you in the constantly growing circle of friends and acquaintances of the Denver Botanic Gardens. Included in this impressive throng are Mayor McNichols, a staunch friend of the Gardens, the City Council and other City officials, Manager Joe Ciancio of the Department of Parks and Recreation and his staff, the Board of Trustees, the Staff of the Gardens, the nearly 3,000 members and hundreds of volunteers and friends. I wish to express our deepest thanks to all of you, because it was a result of your dedication and hard work that we can say that 1975 was in many ways the most noteworthy year in the existence of the Gardens to this time.

A complete story of the year's achievements is too long to tell here, and I hope that you will read the Annual Report for 1975 to gain a full understanding of the many ways in which the Botanic Gardens forged ahead in that year. This will be sent to every member in the early spring of 1976.

At this time, I would like to single out for special commendation all of the members of the Staff of the Botanic Gardens. They are the ones upon whom the great responsibility rests to carry out the endless day-to-day tasks which must be accomplished to keep a botanical garden alive, growing and thriving. It is to them that I wish particularly to extend at this time my personal thanks for their loyalty, dedication and hard work. It is due, in the final analysis to these people, that 1975 was a great year for the Botanic Gardens.

Assistant Director Glenn Park has planned and overseen the planting of many new trees and shrubs and thousands of annuals. In the office we are all indebted to Ruth Hawkins, Janet Wingate and Helen McCloskey; for our bookkeeping and accounting we depend on Iris O'Connor. In the Children's Garden program, Beverly Nilsen was joined this fall by our new Botanist-Horticulturist, Lee Schwade. In the Maintenance section, Jerry Lehr has carried a great deal of responsibility and has been capably assisted by Brian De Haven. Carpenter Roy Nilsen has done much building and cabinet work in the past year. Margaret Sikes has master-minded the Education Program. In the rapidly expanding library, Librarian Solange Huggins has directed the operations most efficiently. Grounds Foreman, Ken Okazaki, has juggled his crew of Gardener-Florists and Utility Workers among many different jobs during the year. His workmen have included Bob Radosevic as maintenance mechanic and equipment operator, and as gardeners Jim Carlson, Jerry Cathey, Frank Chavarria, Richard Martinelli, Ken Price, and Al Rumpeltes. In the greenhouses, Richard Schimming has served as plant propagator with the aid of Frank Garcia. Larry Latta has directed the work in the greenhouses and conservatory with the able help of Nancy Collins, Dave Woodward, Gary Davis, and Frank Ragni. Dan Kruse and Mark Nieto have done an outstanding job as custodians. Andrew Pierce will be joining the staff as Superintendent of the Conservatory and Greenhouses in January 1976.

All the persons mentioned above are permanent employees of the Gardens. A number of temporary and/or part-time employees have played essential roles this past year in keeping the Botanic Gardens moving forward: John Bermingham, Jr. and Cable Horan in the gardens; Carla Mueller as a summer intern; Shirley Champman in the Mycological Laboratory; Nancy Jackson in the Library; Jean DeWoody aiding in record-keeping and making plant labels; Kathleen Fletcher, secretarial; Dr. Patricia Smith, and Dr.

Hugh Wingate and Dr. Janet Wingate in editing *The Green Thumb*; Irene Vittetoe, the Children's Garden, Dr. C. Eugene Osborne and Wesley Woodward, the Gatehouse and the Education Program; Rod Radosevic, custodial work and the Gatehouse; Mrs. Georgia Hawkins, custodial work in the Botanic Gardens House.

In addition to these persons, quite a number of temporary, seasonal laborers did essential work in the outdoor garden, the greenhouses, or the conservatory.

It should be clearly understood that this list includes none of the several hundred volunteers whose aid to the gardens is indispensable, and who will be acknowledged elsewhere.

In conclusion, let me say that all staff members are frequently called upon to carry out many more duties than just the ones they are credited with above, but space prohibits mentioning them. We on the staff are looking forward to another successful year together.

Dr. William G. Gambill, Jr.



The Christmas decorations were lovely, as always. Each year Avalonne Kosanke, Fran Morrison and their committee top the past years efforts. Thanks for all your help.

As is the custom, the Volunteers decorate the Lobby to compliment the Lobby Court display itself. Remember how beautiful the poinsettias were last year? Well, they are just as spectacular now.

All year long the display features color and bloom. In the dark days of winter, it is nice to think back. The year started with the poinsettias followed by the vibrant reds of Rieger begonias. In March, Easter lilies, cinerarias, and cymbidium orchids were on display; next came spring bulbs — tulips, hyacinths, and daffodils — interspersed with calceolarias. At Plant Sale many ferns, bromeliads and others from the Greenhouse collection were on display. Next came the velvety blooms of gloxinias and again a begonia planting. This time, however, besides Rieger, wax, tuberous and rex were also shown. In August fuchsias and impatiens had pride of place backed by podocarpus and other green foliage plants, and finally the myriad of color and form of the chrysanthemum led us into the Holiday Season and the two poinsettia trees.

BOTANY CLUB — FRIDAY

January 16, 1976 — 7:30 P.M.

Classroom C

Slide Show — "Close-Ups in Nature"

Presented by Charles Major — Free and open to the public.

New Club

A membership meeting for the formation of a new African Violet Club will be held at the house, 909 York, on January 26 at 9:30 A.M. Anyone who is interested is cordially invited to attend. For further information, please call Emma Lahr, 771-5200.

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

JANUARY, 1976

JANUARY

3)	9:30 a.m.	Botanic Gardens House — Dining Room	Gloxinia Gesneriad Growers
6)*	9:30 a.m.	Education Building — Lecture Room "C"	Gardener Florists Refresher Course Dr. Jackie Butler, C.S.U.
6)*	10:00 a.m.	Education Building — Lecture Room "B"	National Jr. Horticulture Society
6)*	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
6)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
6)*	1:20 p.m.	Education Building — Lecture Room "B"	General Botany — Mrs. Carol Steele
6)	6:00 p.m.	Education Building — Horticulture Hall	Sierra Club
6)*	7:00 p.m.	Education Building — Lecture Room "B"	House Plant Class — Dave Woodward
6)	7:00 p.m.	Education Building — Lecture Room "C"	Denver Audubon Society (Wildlife Workshop)
6)	7:30 p.m.	Education Building — Lecture Room "A"	Denver Bonsai Club (Planning Committee)
7)*	8:30 a.m.	Education Building — Horticulture Hall	Landscape Management Workshop — Dr. J. Feucht
7)*	1:00 p.m.	Education Building — Lecture Room "C"	Tropical Plants of the Conservatory — Mrs. P. Hayward
8)*	1:20 p.m.	Education Building — Lecture Room "B"	General Botany — Mrs. Carole Steele
8)*	7:00 p.m.	Education Building — Lecture Room "C"	Landscape Horticulture — Mr. Al Rollinger
8)*	7:30 p.m.	Education Building — Lecture Room "A"	Hobby Greenhouse Management — Mr. Robert Briggs
8)	7:30 p.m.	Education Building — Lecture Room "B"	Colorado Open Space Council
8)	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society
10)	9:00 a.m.	Library	Use of the Library
10)*	10:00 a.m.	Education Building — Lecture Room "A"	African Violet Show — Committee Chm.
10)	1:00 p.m.	Education Building — Lecture Room "B"	Colorado Organic Grower's & Marketer's Association
10)	1:30 p.m.	Education Building — Lecture Room "C"	"Voyage to the Enchanted Isles" — Free Film
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12)*	4:00 p.m.	Education Building — Lecture Room "B"	Intensive Course in Botany — Dr. Miriam Denham
12)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society
12)	7:30 p.m.	Botanic Gardens House — Main Room	Sierra Club (Wildlife Workshop)
13)*	9:30 a.m.	Education Building — Lecture Room "B"	Civic Garden Club — Division "C"
13)*	1:20 p.m.	Education Building — Lecture Room "B"	General Botany — Mrs. Carol Steele
13)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
13)	6:00 p.m.	Education Building — Horticulture Hall	Sierra Club
13)*	7:00 p.m.	Education Building — Lecture Room "B"	House Plant Class — Dave Woodward
13)*	7:30 p.m.	Education Building — Lecture Room "A"	Swingle Study Group
14)*	10:00 a.m.	Education Building — Lecture Room "A"	Vegetable Gardening
14)*	1:00 p.m.	Education Building — Lecture Room "C"	Tropical Plants of the Conservatory — Mrs. P. Hayward
14)*	7:30 p.m.	Education Building — Lecture Room "A"	African Violet Pre-Convention Committee
14)*	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
15)*	1:20 p.m.	Education Building — Lecture Room "B"	General Botany — Mrs. Carol Steele
15)*	7:00 p.m.	Education Building — Lecture Room "C"	Landscape Horticulture — Mr. Al Rollinger
15)*	7:30 p.m.	Education Building — Lecture Room "A"	Hobby Greenhouse Management — Mr. Robert Briggs
15)	7:30 p.m.	Education Building — Lecture Room "B"	Organic Garden Club
16)	7:30 p.m.	Education Building — Lecture Room "C"	Denver Botany Club
17)*	9:30 a.m.	Education Building — Lecture Room "B"	Hi-Country Judges Workshop — African Violet Judging Committee
17)	10:00 a.m.	Parking Lot, 909 York	Evergreen Walk
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19)*	Noon	Botanic Gardens House — Dining Room	Colorado Garden Show, Inc.
19)*	4:00 p.m.	Education Building — Lecture Room "B"	Intensive Course in Botany — Dr. Miriam Denham
19)*	7:00 p.m.	Education Building — Lecture Room "B"	Dried Flower Arrangement — Mrs. Robt. Kosanke
20)	12:30 p.m.	Botanic Gardens House — Main - Dining - Kitchen	Rocky Mountain African Violet Council
20)*	1:20 p.m.	Education Building — Lecture Room "B"	General Botany — Mrs. Carol Steele
20)*	7:00 p.m.	Education Building — Lecture Room "A"	House Plant Class — Dave Woodward
20)*	7:00 p.m.	Education Building — Lecture Room "C"	"Cadet Troops" — Irene Vittetoe

CALENDAR OF EVENTS FOR JANUARY (Continued)

20)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club
20)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
21)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Larry Latta
21)*	1:00 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory – Mrs. P. Hayward
21)	7:30 p.m.	Education Building – Horticulture Hall	Plan Metro Denver
21)	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Open Space Council (Air Quality Workshop)
22)*	9:00 a.m.	Education Building – Lecture Room “C”	African Violet Society of Denver
22)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons
22)*	1:20 p.m.	Education Building – Lecture Room “B”	General Botany – Mrs. Carol Steele
22)*	7:00 p.m.	Education Building – Lecture Room “C”	Landscape Horticulture – Mr. Al Rollinger
22)*	7:30 p.m.	Education Building – Lecture Room “A”	Hobby Greenhouse Management – Mr. Robert Briggs
22)	7:30 p.m.	Education Building – Lecture Room “B”	Sierra Club (Oil Shale)
22)*	7:30 p.m.	Botanic Gardens House – Main - Dining - Kitchen	Denver Men’s Garden Club
23)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
24)	9:30 a.m.	Education Building – Lecture Room “A”	Soils & Plant Growth Relations – Dr. James Jackson
26)*	9:30 a.m.	Botanic Gardens House – Main Room	African Violet Council (Formation of new group)
26)*	1:00 p.m.	Botanic Gardens House – Dining Room	Associates Board Meeting
26)*	4:00 p.m.	Education Building – Lecture Room “B”	Intensive Course in Botany – Dr. Miriam Denham
26)*	7:00 p.m.	Education Building – Lecture Room “B”	Dried Flower Arrangements – Mrs. Robt. Kosanke
26)	8:00 p.m.	Education Building – Horticulture Hall	“Rhododendron’s & Azalea’s in Denver – Why Not?” Dr. Walter Eickhorst
27)*	1:20 p.m.	Education Building – Lecture Room “B”	General Botany – Mrs. Carol Steele
27)*	4:00 p.m.	Botanic Gardens House – Conference Room	Board of Trustees Meeting
27)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society
28)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Larry Latta
28)*	1:00 p.m.	Education Building – Lecture Room “A”	History of Botany – Dr. Margaret Goodhue
28)*	1:00 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory – Mrs. P. Hayward
28)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council (Wilderness Workshop)
29)*	1:00 p.m.	Botanic Gardens House – Main Room	Guides Social
29)*	1:20 p.m.	Education Building – Lecture Room “B”	General Botany – Mrs. Carol Steele
29)*	7:00 p.m.	Education Building – Lecture Room “C”	Landscape Horticulture – Mr. Al Rollinger
29)*	7:30 p.m.	Education Building – Lecture Room “A”	Hobby Greenhouse Management – Mr. Robert Briggs
30)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International (Workshop)
31)	9:30 a.m.	Education Building – Lecture Room “C”	Solar Energy Greenhouses – Mr. James Wiegand

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FEBRUARY

2)*	4:00 p.m.	Education Building – Lecture Room “B”	Intensive Course in Botany – Dr. Miriam Denham
2)*	7:00 p.m.	Education Building – Lecture Room “B”	Dried Flower Arrangements – Mrs. Robert Kosanke
3)*	9:00 a.m.	Education Building – Lecture Room “C”	Master Gardeners – Dr. J. Feucht
	5:00 p.m.		
3)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
3)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
3)*	1:20 p.m.	Education Building – Lecture Room “B”	General Botany – Mrs. Carol Steele
3)*	7:00 p.m.	Education Building – Lecture Room “A”	“Cadet Troops” – Irene Vittetoe
3)	7:00 p.m.	Education Building – Lecture Room “C”	Denver Audubon Society (Wildlife Workshop–
3)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
4)*	8:30 a.m.	Education Building – Horticulture Hall	Landscape Management Workshop – Dr. J. Feucht
4)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Larry Latta
4)*	10:00 a.m.	Botanic Gardens House – Main Room	Plant Sale Meeting – Mrs. H. Franson
4)*	1:00 p.m.	Education Building – Lecture Room “A”	History of Botany – Dr. Margaret Goodhue
4)*	1:00 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory – Mrs. P. Hayward
4)*	7:00 p.m.	Education Building – Lecture Room “C”	Vegetable Gardening – Community College – Mr. Lee Ashley
5)*	9:00 a.m.	Botanic Gardens House – Main Room	Master Gardeners – Dr. J. Feucht
5)*	1:20 p.m.	Education Building – Lecture Room “B”	General Botany – Mrs. Carol Steele
5)*	7:00 p.m.	Education Building – Lecture Room “C”	Landscape Horticulture – Mr. Al Rollinger
5)*	7:30 p.m.	Education Building – Lecture Room “A”	Hobby Greenhouse Management (Advanced) – Mr. Robert Briggs
5)	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Open Space Council
5)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society

*Members or enrollees only

PLANT PORTRAITS

Fifty paintings by Ida Hrubresky Pemberton, on loan from the University of Colorado Museum, will be shown in the herbarium display area from January 7 to January 31.

Mrs. Pemberton was born in Nebraska in 1890 and studied at the Art Institute of Chicago. She sent for bulbs, roots and seeds of medicinal plants, grew them in her own greenhouse, and then painted each stage of the plants' development. Each of the plates shows the growth habit of the mature plant and, since Mrs. Pemberton often used a microscope for detail work, are extremely accurate botanical drawings.

Twenty-five will be displayed for two weeks and then twenty-five more will be hung. The hostess/information desk volunteers will be on hand from 10 AM to 3 PM daily. It is hoped that many of our members will come view this fascinating exhibit of watercolors.

January Classes

Reminder: *General Botany for Non-Majors* will be taught on Tuesday and Thursday from January 6 to March 11. The times are 1:20 - 2:50 PM, Tuesdays and 1:20 - 5:10 PM Thursdays, Classroom B. Call 292-5190 Ext. 246 for information on college credit or 297-2547 for information on cost for non-credit work. Limit 15.

The following students have completed the fall *Guides Training Class* and will soon start helping meet the tour requests.

Carol Andrews	Gladys Kirk	Jan Osgood-Mihal
Debbie Clark	Margo Kraettli	Mary Payson
Mary A. Clark	Dan Kruse	John P. Pursell
Kathryn Deegan	Sophie Lo	Betty Silver
Phil Eddings	Marian E. Martin	Kit Spahn
Ed Eisler	Lora Morris	Beth Ann Travis
Tina Jones	Paula Ogilvie	Virginia Valentine

Would you like to help with this worthwhile effort of the Volunteers? Join the new class now! *Tropical Plants of the Conservatory* is listed for January 7 - March 10, 1-3 PM, Classroom C and Conservatory. The cost is \$25.00 to be refunded if the student guides for a total of 40 hours.

Landscape Horticulture is offered on Thursday evenings from January 8 - February 26, 7 to 9:30 PM, Classroom C. Mr. E. Alan Rollinger and Mr. Larry Watson, both well known authorities for this area, will explain many points to remember when creating a desirable outdoor living space. The cost is \$15.00 for members and \$20.00 for non-members.

Beginning *Hobby Greenhouse Management* is full, but currently the advanced class in February still has a few spaces.

Ms. Huggins will teach *Use of the Library* on Saturday, January 10 at 9:00 AM in the Library. This class will provide a free opportunity to enhance your skill in the use of this most important section of the Gardens.

Vegetable Gardening is always a popular course. Larry Latta, who offered such a well received one in the fall, will continue with many helpful ideas to make things easier in the planting season. This class will be taught on Wednesday, January 14 - February 11 from 10 AM to Noon, Classroom A. Cost \$10.00 for members, \$15.00 for non-members.

The Director of the Gardens, Dr. William Gambill, will lead a *Tree Walk in Cheesman Park* to study evergreens on January 17. Meet at 10 AM at 909 York Street. Bundle up and bring your interest and enthusiasm. Free.

An opportunity to make one-of-a-kind arrangements for the perfect house warming gift is scheduled for January 19 to February 9. Avalonne Kosanke will teach *Dried Flower Arrangement* from 7 to 9:30 PM, Classroom B. The cost is \$12.50 for members and \$17.50 for non-members. This includes the cost of the materials to be used.

Dr. James Jackson will discuss *Soil and Plant Growth Relations* at 9:30 AM, January 24 in Classroom A. His outline covers such topics as houseplant soil - formulas, sterile soil preparation, desired soil for certain plants; garden soil with emphasis on Denver County soil survey - what a soil analysis shows and where to get one done, and soil additives. Free.

Theophrastus, who was born about 373 B.C., is generally regarded as the father of botany. He studied at the Academy in Athens with Plato and when Aristotle founded the Lyceum, Theophrastus joined him and later became its head. Not only did he write *An Enquiry Into Plants*, a scientific work which is the first known attempt to classify plants, he also was a keen gardener. In his garden were grown many plants of which he wrote and in his will he made arrangements for the maintenance of his garden after his death.

Information like the above and much more can be learned in *History of Botany*. Dr. Goodhue will offer this class starting on January 28 to March 3 from 1 to 3 PM, Classroom A. The fee is \$15.00 for members and \$20.00 for non-members. Limit 30.

Finally a class which speaks to a topical interest is *Solar Energy Greenhouses*. Come to Classroom C at 9:30 AM on January 31 for this lecture. Free.

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On January 10 join us on a *Voyage to the Enchanted Isles*. This color film visits the Galapagos Islands where Charles Darwin on H.M.S. Beagle obtained insights for his famous theory on the origin of the species. As the narrator quotes from Darwin's *Journals*, magnificent photography records strange and fascinating sights that are relatively unchanged since Darwin's time. Classroom C, 1:30 PM. Free.

* * * * *

Closer to home, the first crocus, 'E. P. Bowles', was noticed last year on January 15. (In fact it may have been blooming earlier but none of us thought to look for it.) Keep your eyes open when you visit the Denver Botanic Gardens and help us spot the earliest flower this year.

CENTENNIAL TAPESTRY

A Colorado Centennial Tapestry, designed and worked by Opportunity School students, which features such sights as Larimer Square, the Capitol and the Denver Botanic Gardens will be on display at the Denver Art Museum until January 6. Approximately 70 students ranging in age from 24 to 75 worked for 7 months on this project; one of our tour guides, Helen Clifford, did the block of the Gardens. It is estimated that it took 40 hours to complete each of the 76 pieces which go to make up the final 6 by 9 foot sampler.

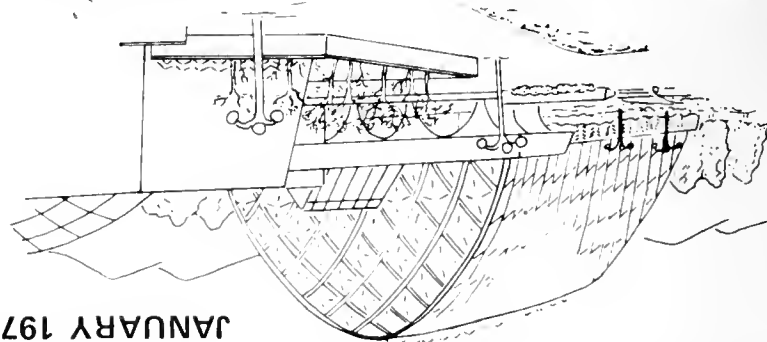
Free Lecture

Mr. Walter Eickhorst, Curator of Cultivated Plants at the Morton Arboretum in Lisle, Illinois, is scheduled to speak at the Denver Botanic Gardens on January 26th.

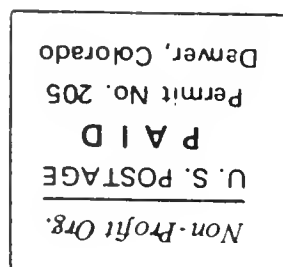
His illustrated lecture will be based on his successful experience in growing rhododendrons in Illinois and is titled "Rhododendrons and Azaleas in Denver - Why Not?"

The public lecture, open to all, will be at 8 p.m. in Horticulture Hall, 1005 York.

DENVER BOTANIC GARDENS, INC.
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JANUARY 1976



(Continued from page 1)

cuttings into the sand and *loosely* tie the top. Put the bags in a place that will be away from direct sunlight until rooted. (Roots will be visible on the inside of the plastic bags.)

I have found that the largest "zip-loc" type bags make good rooting chambers. They can be "zipped up" in the center, leaving vents at each end of about one-half inch. Venting is needed to reduce sweating inside the bag which may result in rotting of both foliage and stems.

Once the cuttings have rooted, carefully remove them from the bags (cutting bags open rather than trying to save them is usually safer) and pot them in four-inch pots.

Happy gardening in '76!

Dr. J. R. Feucht

Colorado State University, through its County Extension Services, is offering a program to fill the tremendous need for providing information to the gardening public.

The endeavor is a volunteer effort called the Master Gardener Program, and utilizes the talents of experienced, knowledgeable gardeners who have a desire to share that knowledge with others in the community.

Recruitment for volunteers will begin in January for persons of any age, sex, or national background who have gardening experience and have the time to devote a minimum of 36 daytime hours of public service.

All volunteers who are accepted will be trained by Horticulturists from the Colorado State University Extension Service in daytime sessions. Sessions will be offered every Tuesday and Thursday through the month of February in Denver and Berthoud. Colorado Springs and Pueblo training sessions will be held every Wednesday and Friday during February and early March.

Interested persons should request an application form, as soon as possible, from your nearest County office or from the Denver Botanic Gardens, 297-2547.

Introducing Dr. Pat Smith

Members will have noticed a new name on the last issue of *The Green Thumb* magazine, for we have a new Editor! Pat has a Masters degree in English and Ph.D. in Communications. For the past three and a half years, she has been editing the technical and popular journals of the Society for Range Management here in Denver. Welcome.

Visit the Athens of the North

By now, all will have received information about the trip to Great Britain. Did you know the Royal Botanic Garden in Edinburgh is the second oldest in the United Kingdom? Two eminent medical men started a small garden near Holyrood Palace in 1670. It was approximately 40 x 40 feet and was used to grow medicinal plants. After several expansions and moves, the Royal Botanic Garden was established at its present site, 70 acres at Inverleith, in 1820.

Not only is it a sanctuary from the hustle and bustle of the city and a mecca for gardening enthusiasts with one of the finest rock gardens and the largest collection of Rhododendrons in cultivation in the world, but is also a center of scientific research. The Herbarium includes two million dried specimens. All this plus the excitement of being in Edinburgh with its history of Mary, Queen of Scots and Bonnie Prince Charlie.

Don't delay in signing up for the trip — May 23 to June 13, 1976.

Help please!

We need a volunteer to help one-half day a week transcribing plant propagation worksheet information to file cards. It would be especially helpful if the person is a good typist.

If you are interested, please call Lee Schwade, 297-2547.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR MARCH

Recently, Mr. Larry Gueck, Extension Horticulturist, Jefferson County, and I completed a "tour" of the east slope from Pueblo to Greeley, presenting some workshops on transplanting and pruning practices. One question seemed to crop up at each location that, at least in my mind, seemed the most misunderstood of all and is worth elaborating on in this column. The question, "What is sunscald and how does it come about"? A fairly universal answer from the audience was that is "burn from the sun": a seemingly logical answer based upon the term sunscald. The term 'sunscald' is really very unfortunate since it does convey an idea that the sun causes a burn or scald. This, however, could not be further from the truth. Let's look at what really happens.

To understand sunscald, it would be well to first review the hardening-off and dormancy cycle of a hardy, woody plant because this has bearing on the subject. In late summer and on into the fall months, woody plants go into successive stages of "hardening" or getting ready for winter. This is triggered primarily by shortening days and cooling temperatures but can also be hastened by stress from temporary water deficits. During this process, the complex chemistry of a plant changes and gradually, the free water in the plant cells becomes "chemically bound", resulting in cells and tissues that can freeze without killing them. Most plants are not in a full dormancy until late into the fall. This dormancy brings about a certain amount of stability in the plant that is not affected by external climatic changes until the plant has experienced a given amount of cold. In other words, the plant is in an irreversible state of dormancy until the cold period has been satisfied. This period varies from one plant to another but as a general rule, plants begin to reverse (come out of the dormant state) about mid-January. It is at this time and on into early spring that a thin-barked tree may be subject to sunscald.

At that time of year (January-April) it is common to have warm, sunny shirt-sleeve days but usual to have rapid drops in temperature at night. The angle of the sun is also low. As the sun warms the side of a thin-barked tree (the southwest side) cells in the bark tissues become active much as they would be in May or June. The bound water becomes free water. At night, the cells are killed when the temperatures drop rapidly. The rapid drop causes the free water in the cells to move into the intercellular spaces, thus dehydrating the cell contents. Thus, sunscald is really a dehydration process just as any other type of winterkill or freeze damage is. It is not the result of ice crystals puncturing the cell walls as was once thought.

Trees are wrapped to insulate against sudden temperature change. In other words, it keeps the plant consistently cold. The commercial "crepe" tree wraps are designed for this purpose, containing both insulating material and a light, reflective surface.

What trees need to be wrapped? Any fall-transplanted, thin-barked tree should be, particularly, if it is shy of many limbs to shade the trunk and if it is going to be planted in an exposed situation. Large trees which have thin bark should be wrapped for at least two winters. Young honeylocust, redbud, green ash, maple and mountain ash, among others, are particularly vulnerable. Hackberry, oaks, aspen

and white birch seem to be less prone. The latter two probably because they already have a light, reflective bark.

Where practical, tree wraps should be removed during the growing season and replaced in the fall. There have been some cases where the wrap itself harbored injurious insects and diseases.

Wrapping from the bottom up to the first or second scaffold branch is desirable. In this way, water sheds off the wrap reducing conditions for disease development and ice formation.

To hold the final twist of the wrap at the top, use a single tack or a tacker gun. Avoid tape, wire, or string that may eventually cause a girdling of the trunk.

As indicated in last month's column, now would be a good time to start some of the garden flowers indoors but only start those that are slow to develop. If started too early, they will tend to become "leggy" and may require supplemental light. About the middle of the month you could plan to start some of the smaller seeds like petunia, verbena, seed geraniums, ageratum, and coleus. Other more common annuals like marigold and zinnias should await mid-April because they germinate quickly and will soon outgrow the pots before they can be put out in mid-May.

It is best to use sterilized soil, making sure that the soil is well drained. If you use the potting mixes available in grocery stores and garden centers, mix it with some of your own soil. Most potting soils are too high in organic matter, tending to become either too wet or too dry. To sterilize the soil, place it in your oven in shallow pans at a temperature not to exceed 250 degrees for 45 minutes.

Most any container for planting will do but it should have drainage holes near the bottom on the sides. By the way, you will need some kind of saucer underneath the pot in order to catch excess moisture. To keep seed moist until germination, they can be covered with plastic or kept under glass. Once germination starts, the cover must be removed and the pots gradually placed in a bright exposure.

To prevent damping-off, a serious disease of seedlings even though the soil has been sterilized, it is a good idea to pretreat the seeds with a small amount of fungicide such as "Maneb" or "Captan". The easiest way to treat the seeds is to cut the seed packet at one corner, then use enough of the powdered fungicide to cover the tip of a knife. Place it in the seed packet and shake the seed up until it is fully coated with the fungicide.

On warm days in March it is a good idea to do a little pruning around the yard particularly some of the deciduous shrubs that have become too leggy and crowded with large canes. Lilacs, honeysuckle and some of the viburnums eventually develop a thicket of canes that should be thinned to keep the plant healthy as well as attractive. The dormant period is a good time because it is easier to work in the plant and you can often destroy a lot of the insect problems such as oyster shell scale and borers. Usually the older canes are the weaker and are subject to more scale and borer problems. This is particularly true of lilacs. Most canes should be removed as close to the ground as possible. This will require curved pruning shears and a good pair of lopping shears. By properly thinning and spacing the canes to allow more light to penetrate, the shrub will develop a better foliage, thus making the plant healthier, as well as prettier.

—Dr. J. R. Feucht

SILVER ANNIVERSARY OF THE DENVER BOTANIC GARDENS

The first meeting of the Board of Trustees of the Botanic Gardens Foundation of Denver, Inc. was on February 27, 1951, although the Corporation became official when the Articles of Incorporation was authorized on February 3, 1951.

The first meeting was held in the beautiful home of Mr. & Mrs. John Evans which was then on East Alameda Avenue at York Street. The charter Trustees were Mrs. A. L. Barbour, Mr. Myron Blackmer, Mr. S. R. DeBoer, Mrs. John Evans, Mr. William H. Ferguson, Mrs. George H. Garrey, Mr. Milton J. Keegan, Mr. George Kelly, Mr. Robert E. More, Dr. Moras L. Shubert, Dr. Robert L. Stearns and Mrs. James J. Waring. Ex-Officio members were Mr. Frazer Arnold, President, Denver Zoological Foundation; Mr. Fred R. Johnson, President, Colorado Forestry & Horticulture Association; Mr. Hudson Moore, Jr., President, Museum of Natural History; and Mayor Quigg Newton.

Those present at the first meeting were Mrs. A. L. Barbour, Mr. Myron Blackmer, Mr. S. R. DeBoer, Mrs. John Evans, Mrs. George H. Garrey, Mr. Milton J. Keegan, Mr. George Kelly, Mr. Robert E. More, Dr. Moras L. Shubert, Mrs. James J. Waring, Mr. Frazer Arnold, Mr. Fred R. Johnson and Mr. Hudson Moore, Jr.

The principal business of the meeting involved adopting the By-Laws, ratification of our Agreement with the City & County of Denver, adoption of the official seal and election of officers. Elected were:

Mrs. John Evans, President
Mr. Milton J. Keegan, Vice-President
Mr. Malcolm Lindsey, Vice-President
Mrs. George H. Garrey, Vice-President
Dr. Moras L. Shubert, Secretary-Treasurer

Executive Committee Members:

Officers listed above, and
Mr. Myron K. Blackmer
Mr. S. R. DeBoer
Mr. William H. Ferguson
Mr. Hudson Moore, Jr.

Five of the present Trustees are charter members: Mrs. George H. Garrey, Mr. Hudson Moore, Jr., Dr. Moras L. Shubert, Dr. Robert L. Stearns, Mrs. James J. Waring.

The first attempt to establish a Botanic Gardens area in City Park proved unsuccessful because of theft and vandalism so the York Street site was acquired and through the generosity of Mrs. Waring, so was the present Botanic Gardens House.

During the last 25 years much has been achieved and the accomplishments have been accelerating in recent years. May the next 25 years be as productive and rewarding.

* * * * *

Residents of the City and County of Denver are invited to participate in a tree planting program co-sponsored by the City & County of Denver, Trees for Today and Tomorrow, and The Park People. This project provides a \$20.00 incentive to be paid to the property owner to help defray the cost of one tree per property per year. The tree must cost \$40.00 (or more), must be planted in the curb area (public right-of-way, between the curb and property line), and must be chosen and planted according to the Denver City Forester's specifications.

To learn more about the Denver Street Tree Planting Project, contact the City Forester at 297-2571 or Trees for Today & Tomorrow, Ken Hostetler, 355-1405.

DeBOER MEMORIAL TREE FUND

The Colorado Chapter of the American Society of Landscape Architects has established a fund for the planting of groves of trees in DeBoer Park, located at Harvard Ave. and South Vine Street, Denver.

S. R. DeBoer, a Fellow of A.S.L.A., was the Landscape Architect for the City of Denver from 1910-1931, and became its planning engineer and park consultant from 1932 until 1958. He was in private practice until his passing, in 1974, at the age of 91.

His foresight and ability in designing and planting our parks, parkways and Civic Center, have given the citizens of Denver a great heritage of beauty.

One of his last wise comments: "Before it is too late, we must not stop in our planning for beauty. Our trees and parks and gardens must be renewed constantly if we are to leave a decent world for those who follow us. Now is the time to plan that world!"

If you appreciate this great inheritance, would you care to honor him? Your tax deductible contribution made payable to The Park People for DeBoer Memorial Tree Fund should be mailed to Eugene Field House, 715 South Franklin Street, Denver, Colorado 80209.

For the remarkable impact of S. R. DeBoer, on the city of Denver, refer to *The Green Thumb*, December 1972.



The North-Central Branch of the Entomological Society of America will hold its 1976 meeting at the Hilton Hotel on March 24, 25 and 26th. These meetings will interest scientists, educators, insect hobbyists, and various chemical leaders.

For further information, please contact John A. Quist, Colorado State University, 221-1186.

* * * * *

The lectures at the Federation Garden Club Headquarters, 1556 Emerson St., will continue on March 31 with two speakers at 9:30 and 11:30 A.M. Marlo Meakins will speak on Composting and Mulching and Selection and Planting of Trees will be discussed by Jim Feucht. The cost is 50¢ for members and \$1.00 for non-members. Please pay at the door.

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

MARCH, 1976

MARCH

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CALENDAR OF EVENTS FOR THE MONTH OF MARCH (Continued)

16)*	7:00 p.m.	Education Building – Lecture Room “C”	Vegetable Gardening – Mr. Dick Hannigan
16)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club
16)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
17)	9:00 a.m.	Botanic Gardens House – Parking Lot	PLANT LIFE FIELD TRIP – Dr. E. H. Brunquist
17)	10:00 a.m.	Education Building – Lecture Room “A”	“Identification of Shrubs” – Dr. James Feucht
17)*	7:00 p.m.	Education Building – Lecture Room “B”	Basic Flower Arrangement – Mr. Lee Ashley
17)*	7:00 p.m.	Education Building – Lecture Room “A”	House Plant Class – Mr. Dave Woodward
17)	7:30 p.m.	Education Building – Horticulture Hall	Mycological Workshop – Mr. George Grimes
17)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Commission on Community Relations
18)	7:30 p.m.	Education Building – Lecture Room “A”	Colorado Open Space Council (Air Quality Workshop)
18)*	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Bonsai Club
18)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Garden Club
19)*	4:00 p.m.	Botanic Gardens House – Main - Dining – Kitchen	“Leadership Denver ”
19)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Botany Club
20)	9:30 a.m.	Education Building – Lecture Room “A”	National Jr. Horticulture
20)	9:30 a.m.	Education Building – Lecture Room “B”	Hi-Country Judges Workshop
20)	9:30 a.m.	Education Building – Lecture Room “C”	“Home Landscaping” – Barbara Hyde
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22)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
22)*	7:00 p.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
22)*	7:00 p.m.	Education Building – Lecture Room “B”	Basic Bonsai – Mrs. Mary Neil
23)*	10:00 a.m.	Education Building – Lecture Room “B”	Basic Bonsai – Mrs. Mary Neil
23)*	4:00 p.m.	Botanic Gardens House – Conference Room	Board of Trustees Meeting
23)*	7:00 p.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
23)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society
23)	8:00 p.m.	Botanic Gardens House – Main Room	English Speaking Union – Speaker: Malcolm Booth
23)	8:00 p.m.	Education Building – Horticulture Hall	“Wildflowers of Northern Montana & Southern Alberta” Speaker: Mr. Lou Hagener
24)*	7:00 p.m.	Education Building – Lecture Room “B”	Basic Flower Arrangement – Mr. Lee Ashley
24)	7:30 p.m.	Education Building – Lecture Room “A”	Mycological Workshop
25)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Meeting
25)*	10:00 a.m.	Education Building – Lecture Room “A”	African Violet Club – Chapter 1
25)*	11:00 a.m.	Education Building – Lecture Rooms “B” & “C”	U.S. Forest Service Workshop – “Endangered Plant Species”
25)*	7:30 p.m.	Botanic Gardens House – Main - Dining - Kitchen	Denver Men’s Garden Club
26)*	8:00 a.m.	Education Building – Lecture Rooms “B” & “C”	U. S. Forest Service Workshop
26)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
27)	10:00 a.m.	Education Building – Lecture Room “A”	“Rose Pruning Demonstration” – Mrs. H. Franson & Mr. G. Park
27)*	1:00 p.m.	Education Building – Lecture Room “C”	African Violet Show Committee Chairmen
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29)*	10:00 a.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
29)*	7:00 p.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
29)*	7:00 p.m.	Education Building – Lecture Room “B”	Basic Bonsai – Mrs. Mary Neil
29)	8:00 p.m.	Education Building – Lecture Room “C”	Nature Conservancy
30)*	10:00 a.m.	Education Building – Lecture Room “B”	Basic Bonsai – Mrs. Mary Neil
30)*	7:00 p.m.	Education Building – Lecture Room “A”	Vegetable Gardening – Mr. Dick Hannigan
31)*	1:00 p.m.	Botanic Gardens House – Main - Dining - Kitchen	Guides Social – Speaker: Mr. Jim Wright
31)*	7:00 p.m.	Education Building – Lecture Room “B”	Basic Flower Arrangement – Mr. Lee Ashley
31)	7:30 p.m.	Education Building – Lecture Room “A”	Mycological Workshop
31)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council (Wilderness Workshop)
APRIL		◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆	◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆
1)*	9:00 a.m.	Education Building – Lecture Room “A”	“Keep Colorado Beautiful”
1)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council
1)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society (Orchid Auction)
2)*	9:00 a.m.	Education Building – Lecture Room “A”	“Keep Colorado Beautiful”
2)	11:00 a.m.	Botanic Gardens House – Main – Dining – Kitchen	Civic Garden Club
3)	9:00 a.m.	Education Building – Horticulture Hall	Gladiolus & Dahlia Bulb Sale
3)*	9:00 a.m.	Education Building – Lecture Room “A”	“Keep Colorado Beautiful”
3)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers
3)	1:30 p.m.	Education Building – Lecture Room “C”	Film: “Magic Carpet of Tulipland”

**MEMBERS OR ENROLLEES ONLY*

SPRING CLASSES

By now members should have received the Spring List of Classes and it is hoped all will find something of interest listed therein.

Students wishing to learn more about horticulture are urged to attend the March 6 *Orientation* to the National Junior Horticulture Association programs and contests and to return on March 20 to learn to identify *Plants in Winter Condition*. Both sessions are at 9:30 AM, Classroom A, are free and are limited to students under 21 years of age.

For reasons that are obvious to anyone who has priced lettuce in the supermarket, Gilbert White's comments of 1778 still hold true: "As to the produce of the garden, every . . . person of observation may perceive, within his own memory, both in town and country, how vastly the consumption of vegetables is increasing . . . every decent labourer also has his garden, which is half his support, as well as his delight . . ." Dick Hannigan's courses in *Vegetable Gardening* will touch on all phases of growing a garden, including seeding, care and cultivation, soil, insects, varieties and watering. The day class is from March 8 to April 5, 10 to Noon and the evening one March 9 to April 6, 7 to 9 P.M. The cost is \$10.00 for members and \$15.00 for non-members.

Two classes in *Basic Bonsai* will also be offered, one in the evening from March 8 to March 29 and one in the mornings from March 9 to March 30. The cost of \$12.00 for members and \$17.00 for non-members includes the price of soil and wire. However, the trees will cost extra — approximately \$10.00 per tree. Limit 15 students in each class.

A free class in *Basic Taxonomy* will help prepare students for the field trips later. (The first of the season will be on March 17 at 9 A.M.; meet at 909 York Street.) Learn how to look at a plant. The arrangement of sepals, petals, stamens and pistil all are indications of family, genus and species. Once you learn to use your eyes, you will recognize many of the wild cousins of our garden flowers. Dr. Zeiner will teach this free class at 9:30 A.M., March 9, Classroom C.

The natives will also be featured later in the month when Dr. Feucht will teach *Identification of Shrubs*. This will begin on March 17 at 10 A.M. and the cost is \$10.00 for members and \$15.00 for non-members, limit 20.

(And speaking of taxonomy, do read *The New Yorker* article of January 12, 1976. This recounts in a most interesting fashion the search for *Betula uber*.)

The *Annual Rose Symposium* is scheduled for Saturday, March 13 at 9:30 A.M. in Horticulture Hall. This workshop provides a wonderful opportunity to hear knowledgeable speakers on a variety of rose growing topics. Ample time will be allowed for questions.

If you have success with your roses this year, you might like to make some old fashioned scented jewelry that was popular in Victorian times.

The principal ingredient in rose ebony beads is fragrant rose petals, which are ground in a food grinder. The pulp and juice are thoroughly stirred in an iron skillet, which turns the mixture black. It is left in the skillet for a day, and turned occasionally to make certain it is entirely black. Then the mixture is ground again, dried and ground again. This latter process is repeated daily for nine days. On the final day a little water is added, after which the ebony mixture is rolled into little round balls. A pin is inserted through each one, and they are left to dry.

After a few days the pins are removed, and the small balls become beads that can be strung. The beads are hard and durable, and smell like roses from which they were

derived. They retain their fragrance for many years. (Recipe, courtesy the All-American Rose Selection News.)

This day, devoted to roses, will be culminated by a free film, "The World of Roses" at 1:30, Classroom C.

Another opportunity to learn more about roses will be provided on March 27! Expert rosarians will take small groups into the garden and there proper pruning techniques will be demonstrated. This is scheduled from 10 a.m. until 2 p.m. (come and go as you wish) but please meet in Classroom A.



Beginning Flower Arrangement, March 17 — April 7, 7 to 9 P.M., Classroom B, will teach participants how to use color and design most effectively in bouquets for the home. The cost which includes all flower material is \$20.00 for members and \$25.00 for non-members.

Finally on March 20, Barbara Hyde will discuss *Home Landscaping*. This is to be an illustrated lecture and participants will receive a C.S.U. Bulletin on the subject. Meet at 9:30 A.M., Classroom C. The cost, to be paid at the door, is \$1.00 for the Bulletin.

You are cordially invited to attend the Annual Membership Dinner on Thursday, March 11th at Horticulture Hall. The speaker will be Mr. Andrew Pierce, Superintendent of Conservatory and Greenhouses at the Denver Botanic Gardens. His topic will be "The Flowering Island". The social hour is planned for 6 to 7 P.M., followed by dinner at 7 P.M.

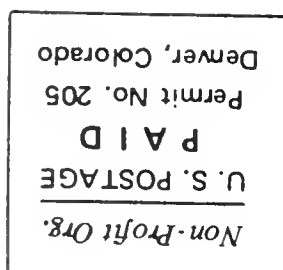
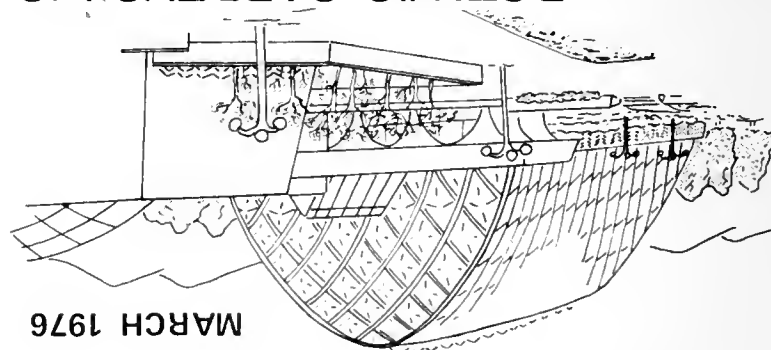
Wild Flower Lecture

Mr. Lou Hagener, Chairman of the Science Department of Northern Montana College, will give an illustrated lecture on March 23 on Wild Flowers of Northern Montana and Southern Alberta.

Mr. Hagener, who has written several booklets on vegetation of northcentral Montana, is currently working with the Canadian government on establishing a prairie wilderness area in Alberta.

The lecture, free and open to the public, will be at 8 p.m. in Horticulture Hall, 1005 York Street. All welcome.

DENVER BOTANIC GARDENS INC.
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4th Annual Used Book Sale

It's that time of year again when the Library Volunteers will start sorting and pricing used books for this year's sale on May 7 and 8. Some members and their friends have promised books which haven't come in yet. Help us to avoid that last minute crush and bring in your contributions soon.

Isn't anyone parting with *Gourmet* and *Horticulture* magazines this year? We're already inundated with *Sunset*, *House & Gardens*, *Flower Grower*, etc., but hardly any *Gourmet* or *Horticulture*. We need all kinds of paperbacks, and for some reason we're short on mysteries. You remember we collect books for this sale all year long.

You helped us to buy \$2500 of books for the Library this past year. We'll need to take in almost \$2700 this year just to keep even with inflation, and we don't want to just keep even. Will you help us to aim for \$3000?

Some of the books that you helped purchase are among these recent additions to the Library collection.

Darnell, A. W., *Unfamiliar Flowers For Your Garden*.

Blashfield, Jean F., *Apartment Greenery*.

McDonald, Elvin, *Little Plants for Small Spaces*

Smith, Alexander H., *A Field Guide to Western Mushrooms*.

Coats, Alice M., *The Treasury of Flowers*.

Van Rooten, Luis, *The Floriculturist's Vade-Mecum of Exotic and Recondite Plants* . . .

Jorgensen, Jay, *Landscape Design for the Disabled*.

When visiting the outside gardens, look for *Iris histrioides*, one of the most pleasant of all minor "bulbs". Since these beauties can stand battering by the elements, even when snow is on the ground, you'll spot a flash of vivid blue with just a dash of gold. *Iris reticulata* comes a little later, grows a little taller and is dressed in purple.

And look for tulips both in the Lobby Court and outside. We received boxes and boxes of tulips from the Netherlands Flower-bulb Institute, Inc. all blazoned with "Happy Birthday, U.S.A." Of the 10,000 bulbs received, watch for the early red and white Emperors. Later 'Hollands Glory' a red orange, 'West Point' a yellow and 'Smiling Queen' a pink will be worth admiring.

1976 CHILDREN'S GARDEN PROGRAM

Registration for beginning gardeners will be March 17 to March 31. Children currently in the 4th, 5th or 6th grades are eligible. Registration forms will be mailed on request. For further information, call Bev Nilsen, 297-2547, Ext. 6. If you wish to learn more about this program, be sure to read the March *Ranger Rick* magazine. There is a very interesting article about our Children's Garden and the illustrations by Loraine Yeatts are also well worth studying.



The Botany Club meeting on March 19 will feature a talk on Cacti by Virginia Simmons. All welcome at 7:30 P.M., Classroom C.

"Meet the Grasses" by Helen Zeiner will be the featured topic at the March 21st meeting of Around the Seasons Club. Visitors are welcome to attend the meeting at 11 A.M., 909 York Street.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR MAY

This is the month when gardening gets into full swing. All the plans that you might have made during the winter and early spring months can now be implemented.

By the middle of the month it should be safe to put out all the bedding plants except for tomatoes and peppers. These are probably best protected from possible cold weather until the end of the month. Tomatoes and peppers don't develop well until nighttime temperatures average above 50 degrees F. Setting them out earlier often causes them to delay in fruit set.

Hopefully you waited until now to apply fertilizers on the lawn. If your lawn needs it, this would be a good time to put on a standard 20-10-5 analysis fertilizer plus iron. This is a good combination. If you apply this at the rate of approximately five pounds of fertilizer for every one thousand square feet, you will be putting on the actual recommended one pound of nitrogen. There is no need to go higher because this often forces soft growth that may be subject to fungus diseases.

If you have had trouble with crab grass in your lawn, pre-emergent control materials can often be put down early in the month. Most any of them on the market are suitable. Probably one of the most common is Dacthal. This chemical, as with all pre-emergent herbicides, is designed to stop the growth of crab grass seed as it sprouts. It has no effect, however, if applied too late because it will not control seedlings after the roots have penetrated the soil. Be sure you don't mistake crab grass with quack grass. Quack grass is a perennial and if you have that, there are no satisfactory controls other than trying to dig it out. This is often a very frustrating task because you are more apt to propagate it than you are to control it.

You may also have perennial bunch-type grasses in your lawn. If they are bunch-types that do not develop ground runners or rhizomes, the easiest way to control these is to dig them out and patch in with pieces of sod. Use the sod from along the edges of your yard such as in areas where it is tending to creep into flower beds and shrub borders. When lifting a piece of sod, don't attempt to take a deep soil layer with it. Sod is better cut thinly, no more than about one inch. This may seem severe treatment but it does promote better re-rooting and rhizome development than if you take a thick portion of sod.

This is also a good time to control dandelions and other broadleafed weeds in the turf. Use a liquid weed control material containing 2, 4-D and Sylvex. Make certain that you dilute it according to directions and apply it on a wind-free day so that you avoid drift into desirable plants. If you have just a few weeds in your lawn, I have found that it is safer and much more practical to use spot treatment rather than spraying the entire law. There are inexpensive applicators that are simply plastic tubes with a valve at the bottom that releases the chemical when the device is pushed. The weed control chemical is available for these applicators in a solid, tablet form already premeasured for you.

Be on the watch for certain insect pests that seem to be quite devastating this time of year. Leaf rollers, particularly in crab apples, will appear at a time when the young leaves are unfolding and at about the same time the trees are in bloom. Don't rush out and spray, however, if you see leaf rollers at that time. To avoid killing bees you should wait

until nearly all of the petals drop. As soon as petal fall has occurred, apply malathion to any leaves showing signs of the leaf rollers. The earlier you catch them, the more effective the control.

The same would be true of tent caterpillars which can be very devastating in a short period of time. Because of the mild winter I anticipate high populations of these two insects.

If you have spruce, fir or Douglas fir and, particularly, if you live in east Denver, Littleton or Englewood, be on the lookout for the tussock moth. Hatch normally begins sometime in mid-May and by the middle of June, extensive feeding causes the total loss of the tops of the trees if allowed to go undetected.

Because the tussock moth is so difficult to see when the larvae have hatched from the eggs and because they are usually in the tops of the trees, a good way to detect them is to stake down a sheet of paper or plastic near the trunk of the tree and watch daily for little bits of needles and yellow, sand-like droppings. If this occurs, spraying is warranted. If the trees are small enough to be able to reach their tops with your own spray equipments, three sprays about one week apart with malathion or diazinon will give good control. It is important, however, that the entire tree, including the tops, be saturated with the spray. If your trees are too big to spray adequately with your own equipment, secure the services of a professional arborist. If you spray your own trees, be sure to follow the directions on the label.

We have received over the past few years, a number of inquiries on the control on pinyon borers. These are evidenced by masses of pitch, usually found in the crotches of the trees beneath which are cream-colored larvae which cause the damage. Unfortunately, there are no control measures known and about the only way to try to get rid of them is to dig them out of the pitch with a pocket knife.

You may wish to try applying Lindane as a preventative and this should be put on now. It should be applied as a spray directly to the bark of the main trunk, paying particular attention to deposits of the Lindane in the branch crotches. A degree of control can be attained through good cultural practices. The borers seem to prefer pinyon that are under stress and in most home gardens, the stress is due to poor aeration of the soil, accentuated by poor watering practices. Established pinyon should be allowed to stay on the dry side and can thrive perfectly well on natural moisture. Avoid watering your pinyon every time you water the lawn. If you have a sprinkler system, it might be well to adjust the heads in such a way as to direct the water away from the trees. It is also a good idea to keep the soil beneath the trees cultivated by shallow hoeing. You can also aerate more deeply using a soil needle device such as the Ross Root Feeder.

Make it a practice to take a weekly tour of your yard and notice the changes taking place. This not only helps you enjoy the dynamic phenomena that occurs in a garden from week to week, but will help you to determine any possible problems. Often it is not necessary to apply control measures when you begin to see that the problem is really not becoming serious or it may turn out to be no problem at all. In this way, gardening becomes a joy and a learning experience, rather than a chore.

Dr. J. R. Feucht



It's that time again!

Everywhere around the Denver Botanic Gardens things are busier than usual getting ready for the Plant Sale. Join us on May 7 and 8 from 9:30 a.m. to 5:30 p.m. in and around the Boettcher Memorial Center and don't forget to admire the Lobby Court with its pink and white mums and roses while you're here.

A special feature will be the red, white and blue garden booth. One border to consider would use red salvia at the back and blue ageratum and white alyssum in the foreground. If you want to get fancier, what about a bicentennial '76 flag, a liberty bell, or a bicentennial star? Information as to layout, suggested plants and planting is available in the Library.



While there, be sure to go downstairs to see some 5000 Used Books on all subjects for sale in the basement of the Library, as well as the tremendous number of magazines including *Flower & Garden*, *Horticulture*, *Audubon*, *Smithsonian*, *National Geographic*, and many western magazines. Most books are priced under a dollar and the magazines are mainly priced at twenty-five cents or less.

In the House Plant section, we will have more varieties of hibiscus, bougainvillea and bromeliads than ever before — plus a larger selection and more unusual carnivorous plants. The orchid selection will have *Phalaenopsis*, *Paphiopedilums*, and many others. Of unusual interest will be the "Mickey Mouse Plant," or *Ochna*. It has an orange flower which is followed by green, then black berries. Also available will be flowering plants for Mother's Day, cacti, palms and hanging baskets, plus many tropical plants found in the Denver Botanic Gardens Conservatory.

Buyers at the Vegetable Booth will find many old and new varieties of tomatoes, suitable for growing in a garden, or in a patio container. Among the newer varieties will be 'Big Girl', 'Gardener's Delight', and 'Tumbling Tom'. We will have Pascal celery, broccoli, cabbage, peppers, cucumbers, cantaloupe, and watermelon. New and old varieties will be offered along with tips for success in growing them.

Help in planting a kitchen garden, including chives, marjoram, basil, thyme, burnet, rosemary, oregano, tarragon and savory will be available at the Herb Booth. These old stand-bys, a must for every good cook, may also be used in interplanting with your flower garden. Thymes, low growing evergreens, are excellent as borders around upright evergreens. Corsican mint creeps into a lovely mat around your favorite plant. Rosemary and oriental garlic provide an attractive contrast to your perennial border. And don't forget the scented geraniums for their fragrant leaves.

The Berry Basket Booth has increased the quantity of plants this year so that there will be plenty for all. Among the assortment will be raspberries, gooseberries, grapes, currants, and strawberries.

Using flowering Annuals, it is only proper to go "patriotic" in 1976 with bright reds, glistening whites, and vivid blues. An all-petunia display can be arranged in different and creative designs or for the shady spot, we have red and white impatiens with blue pansies, or lobelia. If patio gardening is your forte, consider red and white geraniums or begonias, and maybe add blue petunias (or *Nierembergia*) to get the blue effect. For the rock gardens, alyssum, verbena and ageratum may be considered. These are only a few selections of the wide variety of plants that will be offered for the "Spirit of '76" gardener at the Plant Sale.

Again, among the native wild flowers and ground covers featured at the Rock Garden Booth will be a red flowered cinquefoil, *Potentilla thuberi*. This native of New Mexico and Arizona has been grown especially for this sale. It is hardy at 8,500 elevation and blooms from July into September and October.

Other popular natives include blue-eyed grass, as well as pink plumes and pussytoes. A red penstemon, *Penstemon pinifolius*, resembles tiny junipers growing in a mat with vermilion red spikes six to eight inches tall, and is an excellent ground cover. Among cultivated plants will be sunroses in various colors, coral bells, unusual sedums, named varieties of hen and chicks, plus various pinks, penstemons and veronicas.

Two columbines, the alpine *Aquilegia saximontana*, with dainty white cup and blue saucer on three-inch plants and the blunt-spurred red columbine, *A. elegantula* on plants less than a foot high, will be prized by dedicated rock gardeners. Of course, Colorado columbine, *A. caerulea*, will be available also. The Colorado columbine was designated our state flower in April 1890. It has blue and white blossoms, 2 to 4 inches broad with long slender spurs and grows tall in shady locations.

The Patio Plant section has offerings from small to large. Among the small are hanging baskets of wandering jew in

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

MAY, 1976

MAY

3)	10:00 a.m.	Botanic Gardens House	Historic Denver House Tour OPEN TO PUBLIC: 10:00 a.m. — 6:00 p.m.
4)*	10:00 a.m.	Herbarium	Herbarium Committee Meeting
4)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
4)	7:00 p.m.	Botanic Gardens House — Main Room	Denver Audubon Society (WildlifeWorkshop)
4)	7:30 p.m.	Education Building — Lecture Room “B”	Denver Bonsai Club
5)*	9:45 a.m.	Botanic Gardens House — Main & Dining Rooms	Ikebana International
5)*	3:30 p.m.	Botanic Gardens House — Main Room	Children’s Garden Meeting (Advanced)
5)*	7:30 p.m.	Botanic Gardens House — Main Room	Colorado Mycological Society (Workshop)
6)*	10:00 a.m.	Education Building — Prep Room	Ikebana International
6)*	7:45 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Denver Orchid Society Meeting
7)	9:30 a.m.	Education Building, Horticulture Hall & Surrounding Area	Annual Plant Sale OPEN TO PUBLIC: 9:30 a.m. — 5:30 p.m.
7)	11:00 a.m.	Botanic Gardens House — Main - Dining & Kitchen	Civic Garden Club
8)	9:30 a.m.	Education Building, Horticulture Hall & Surrounding Areas	Annual Plant Sale OPEN TO PUBLIC: 9:30 a.m. — 5:30 p.m.
10)*	1:00 p.m.	Education Building — Lecture Room “B”	Garden Club of Denver
10)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society Meeting
10)	7:30 p.m.	Botanic Gardens House — Main Room	Denver Sierra Club
11)*	9:30 a.m.	Education Building — Lecture Room “B”	Civic Garden Club — Division “C”
11)*	1:00 p.m.	Education Building — Lecture Room “B”	New Roots Garden Club — Meeting and Tour
11)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
11)*	7:00 p.m.	Education Building — Herbarium	American Society of Landscape Architects
11)*	7:30 p.m.	Education Building — Lecture Room “C”	E.C.C. Nature Study Unit
12)*	7:30 p.m.	Education Building — Lecture Room “C”	Colorado Mycological Society (Workshop)
12)*	7:30 p.m.	Botanic Gardens House — Dining Room	Landscape Industry Council
13)*	10:00 a.m.	Education Building — Prep Room	Ikebana International
13)	7:30 p.m.	Botanic Gardens House — Main Room	Denver Rose Society
14)	All Day	Education Building — Horticulture Hall	Parks & Recreation Program
14)*	9:00 a.m. — 3:00 p.m.	Education Building — Service Area	Plant Give-A-Way to Members
14)	7:30 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Denver Dahlia Society
15)*	9:00 a.m. — 1:00 p.m.	Education Building - Service Area	Plant Give-A-Way to Members
15)*	9:30 a.m.	Educational Building — Lecture Room “B”	Hi-Country Judges Workshop
15)*	1:00 — 10:00 p.m.	Education Building, Horticulture Hall & “A” — “B” & “C”	Nature Conservancy Annual Meeting & Catered Dinner
♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦			
18)	7:30 p.m.	Botanic Gardens House — Main - Dining & Kitchen	Rocky Mountain African Violet Council
18)	7:30 p.m.	Education Building — Horticulture Hall	Sierra Club
18)	7:30 p.m.	Education Building — Lecture Room “B”	Denver Bonsai Club

MAY CALENDAR OF EVENTS (Continued)

19)	9:00 a.m.	Botanic Gardens House – Parking Lot	PLANT LIFE FIELD TRIP – Dr. E. H. Brunquist
19)	7:00 p.m.	Education Building – Horticulture Hall	Sierra Club (Back packing)
19)*	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Mycological Society (Workshop)
20)	7:30 p.m.	Education Building – Lecture Room “A”	Colorado Open Space Council
20)*	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Bonsai Club
20)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Garden Club
21)*	9:00 a.m.	Education Building – Lecture Room “B”	Dyeing with Plants – Mrs. Carol Hoffman
21)	7:30 p.m.	Education Building – Herbarium	Denver Botany Club
22)	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International Show OPEN TO PUBLIC: 10:00 a.m. – 5:00 p.m.
22)*	1:00 p.m.	Education Building – Lecture Room “B”	Dyeing with Plants – Mrs. Carol Hoffman
23)	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International Show OPEN TO PUBLIC: 10:00 a.m. - 5:00 p.m.
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24)*	9:30 a.m.	Botanic Gardens House – Main Room	New African Violet Club
24)	7:00 p.m.	Education Building – Horticulture Hall	Sierra Club (Back packing)
24)*	8:00 p.m.	Education Building – Lecture Room “A”	Nature Conservancy
25)*	9:00 a.m.	Education Building - Flower Prep Room	Ikebana International
25)*	4:00 p.m.	Botanic Gardens House – Conference Room	Board of Trustees Meeting
25)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society Meeting
26)	10:00 a.m.	Botanic Gardens House – Main Room	Plant Sale Meeting - Mrs. H. Franson
27)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Meeting
27)	7:00 p.m.	Education Building – Horticulture Hall	Sierra Club (Back packing)
27)*	7:30 p.m.	Botanic Gardens House – Main - Dining & Kitchen	Denver Men’s Garden Club
28)*	10:00 a.m.	Education Building – Horticulture Hall	Ikebana International
29)	1:00 p.m.	Education Building – Horticulture Hall	IRIS SOCIETY SHOW (Weather permitting) OPEN TO PUBLIC: 1:00 - 4:45 p.m.
30)	9:00 a.m.	Education Building – Horticulture Hall	IRIS SOCIETY SHOW (Weather permitting) OPEN TO PUBLIC: 10:00 a.m. – 4:45 p.m.
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JUNE

1)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
1)*	1:00 p.m.	Botanic Gardens House – Dining Room	Editorial Committee Meeting
1)	7:00 p.m.	Education Building – Lecture Room “C”	Denver Audubon Society
1)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
2)	7:00 p.m.	Education Building – Horticulture Hall	Sierra Club (Back packing)
3)	7:30 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council
3)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society

**MEMBERS OR ENROLLEES ONLY*

THE JOLLY GREEN GARDENER

NEWSLETTER

MAY 1976 Vol. 6, No. 3

(For Junior Members)



DENVER BOTANIC GARDENS



Did you know that one of the oldest fibers in the world is cotton fiber? Cotton cloth, which was estimated to be seven thousand years old, has been found in caves in Mexico. As long as five thousand years ago, cotton was grown, spun and woven in Pakistan and Egypt. For centuries Arab traders bought cotton from India and the Orient.

Cotton has always been an important commodity in the economy of the United States. In the early 1600's southern regions produced cotton and shipped most of it to the mills in England which spun the raw cotton into cloth. In 1790, America's first spinning mill was founded in Pawtucket, Rhode Island.



blossom



boll

In 1791, Eli Whitney, of Massachusetts, invented the Cotton Gin. This hand cranked machine separated the fiber from the seed fifty times faster than a slave could do it by hand. With factories growing and the demand spiraling it was now possible to increase the supply. The United States grew to be a world leader in cotton production and today we produce about 40% of the world's supply.

Why is cotton so valuable? The cotton fiber is 1 - 1-1/2" long which is longer than most fibers. It also has a unique natural twist which holds the thread together for weaving. Hundreds of products contain cotton and it is an integral part of our life. Millions of jobs here in America depend on cotton and billions of dollars are invested in it.

Over 500,000 farms in the United States, from Carolina to southern California, produce cotton. Most farms are mechanized and scientifically managed with an array of equipment over \$50,000.

*bud or
"square"*



The flower buds on the plants are called squares. These appear two months after planting. They blossom quickly in the hot sun. At first these flowers which resemble hollyhocks, are white in color. They quickly change to pink and then to dark red. In three days they are gone. When the petals fall, the small green pods mature into cotton bolls. The boll grows to the size of a walnut and within 45-60 days bursts open to show the fluffy white cotton fibers. This is what harvesters pick and process.

Many insects thrive on the cotton plant. Perhaps the best known is the boll weevil. It is certainly the worst pest to the cotton plant. The female weevil, which is about the size of a housefly, lays her eggs in the flower bud. When the eggs hatch, the grubs feed on the boll and maturing cotton fibers. To date no chemical has been developed which can eradicate this insect. It causes great damage yearly and can only be partially controlled.

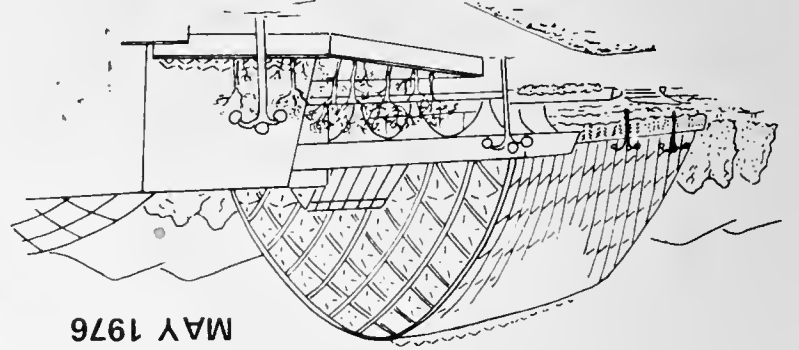
After the cotton is harvested and cleaned, the fiber called lint is pressed into tight 500 lb. bales and sold. Many products contain cotton. You might go through the alphabet and list those you know. Start with A for abrasives and end with Z for zipper tapes.

Perhaps you are unaware of the fact that the cotton seed is also one of our country's most important crops. The seeds are processed at oil mills. The outer fuzz of the seed is removed and used to make rayon, plastics and varnish. The meaty inside is used for oils for margarine, cooking and salad oils. The dry seed remains are used to make fertilizers and to feed livestock.

Answers to picture quiz in March issue:

- (1) daffodil (2) tulip (3) hyacinth
- (4) grape hyacinth (5) crocus

DENVER BOTANIC GARDENS INC.
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PLANT SALE

Denver Botanic Gardens
1005 York Street

May 7 & 8, 1976

9:30 - 5:30 p.m.



A special feature at the Plant Sale this year will be the Red, White and Blue garden Booth. Why not try a bicentennial design this year in one of your flower beds at home. Perhaps you would enjoy a flower bed designed as an American flag, or in the shape of a bell or a star. Information as to different garden designs and plants to use to make them is available in our library.

How about getting a plant to give to your mother on Mother's Day which is the day after the Plant Sale? There are many plants to choose from in the house plant section, even carnivorous plants. The Herb Booth will have basil, chives, thyme, tarragon, oregano, mint and scented geraniums. In the Berry Booth you will find raspberries, currants, grapes and strawberries. There will also be annuals, perennials, trees, shrubs and rock garden plants. If you prefer a non-plant item stop by the Gift Shop.

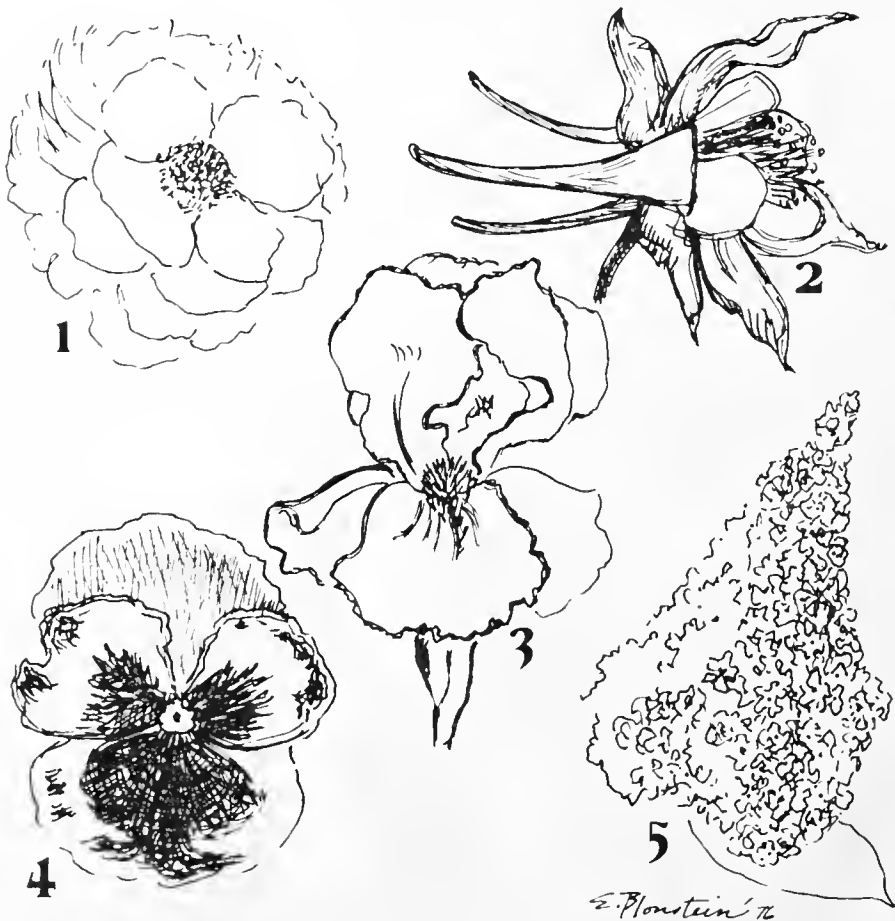
FRUIT LEATHER

A PIONEER CANDY

Fruit leather is made from very ripe fruit — use apples, peaches or pears. First make a fruit "butter" by peeling, coring and slicing the fruit. Simmer on top of the stove in one inch of water until soft. Push fruit and liquid through a food mill. Pour mashed fruit into a large baking pan and add sugar to taste. Also add spices, cinnamon or ginger if desired. Stir well. Bake in a 300° oven for several hours, stirring every 20 minutes.

When this butter is very thick spread half-inch deep on a lightly greased pottery pie plate. Set in a sunny spot, covered with netting, to dry. This is finished when it is dark brown and leathery. Cut into strips. Good for camping.

(from *American Cookery*, by James Beard)



Do you know these flowering plants?
One is the Colorado State Flower

4-1/2" pots to the other end of the scale: one-half bushel size mother geraniums. Of course, we'll have hundreds of other geraniums, also including ivy geraniums, and the once-blooming Martha Washington. A newly developed plant, the double impatiens, which looks just like a miniature rose, will be featured in hanging baskets. After searching many greenhouses, we finally found the hanging ice plant, a rarity, and are lucky to have it! For a great buy, we found 4" tall and very full jade plants which will double in size on your patio this summer. Be sure to keep them out of direct sun or the sun spots will be more than something you read about in scientific journals.

Patio trees in many variations are a new find this year. We also will have the patio and 'Tiny Tim' tomatoes, fuschias, begonias, and for those who want carefree plants, the easy to grow *Asparagus sprengeri*, spike *Dracaena* and vinca in pots and hanging baskets.

You will find a wide variety of hardy Perennials arranged in alphabetical order from A to Z. Included will be the old-time favorites — bleeding heart, delphinium, iris, peony and phlox, as well as the not so familiar *Astilbe*, *Baptisia*, *Catananche*, *Dictamnus*, *Platycodon* and many others. Many new and improved varieties will be available.

Trees and Shrubs will feature rare and common woody plants. Would you like to try *Franklinia alatamaha*? In the late 1700's William Bartram sent specimens of this tree to his father's garden in Philadelphia, where it was named in honor of Benjamin Franklin. It has never again been found in the wild and all known specimens are from those he collected. Other plants are *Hedera helix* 'Pixie', *Lagerstroemia indica* 'Petite Pinkie', and 'Petite Snow', *Lantana camara* 'Christine' and 'Sunset', all trained as 2-foot high patio trees; *Juniperis chinensis* 'Mint Julep' trained as a topiary turkey, and *J. virginiana* 'Sky Rocket' as a narrow pillar. Others to watch for include *Viburnum x carlcephalum* and *Platanus acerifolia* 'Bloodgood' which is more resistant to anthracnose. People who heard Mr. Eickhorst talk may want to try *Rhododendron nudiflorum* 'P.J.M.' and Mollis hybrid azaleas.

Pomegranate, cryptomeria, cypress, and cherry will be among the new trees offered this year at the Bonsai Booth. This will complement the old favorites of red maple, black pine, and bamboo. Pots and instructions will also be available to create your own, or there will be an assortment of already-potted bonsai or saikei. There will also be an instructor of Bonsai for demonstrations in the afternoon at this booth.

Last year 130 memberships were sold and again this year we know the Membership Booth will be busy telling about the benefits that the Gardens have to offer.

Please remember that volunteers are needed in all areas. Call now to learn how you may help. Did you see the April *Better Homes and Gardens* where an emphasis in the Denver Botanic Gardens article was on all that the volunteers do here? You deserve all the credit we can give!

Bonus Plant Give-away, May 14-15

Again this year members will receive a bonus plant which the Gardens wishes to share with its members. To obtain the plant, members should come between 9 a.m. and 3 p.m. on Friday, May 14 or 9 a.m. until 1 p.m. on Saturday, May 15. The membership card should be presented at the garage building on the north side of the service area, west of the greenhouse. (It is the same area as last year but for those of you who are new members, or were not able to come before, enter the Gardens at the Gaylord St. entrance, off 11th Ave. Turn right to reach the service area.)

Most plants to be given away are woody plants, mainly shrubs and all are in containers. Since some members live in apartments, there will be a few house plants available also. Plants will be labeled and have brief culture instructions attached. Some of the following will be available on a first-come-first served basis: *Buddleia* 'Opera,' *Caryopteris* 'Azure,' *Elaeagnus angustifolia* var. *orientalis*, *Pachystachys lutea*, *Ruellia spicata* and *Syringa julianae*.

Please remember the dates and hours and bring your membership card (only one plant for each card, please).

COLORADO'S CENTENNIAL-BICENTENNIAL 1976 IRIS SHOW

Horticulture Hall — Denver Botanic Gardens
1005 York Street

Saturday May 29
Sunday May 30

1 PM to 5 PM
10 AM to 5 PM

The public is invited without admission charge to view the show iris and/or enter horticultural stalks and/or arrangements.

Those viewing the show during the above hours will see displayed the region's finest iris. The show is timed for peak bloom of the outstanding Tall Bearded variety. The latest new iris introductions will be separately featured by commercial growers. An artistic arrangement division will have a tour-of-Colorado section; other sections will show Aril iris, Beardless iris, seedlings propagated by the region's hybridizers, and youth horticultural stalks and/or arrangements.

Those wishing to enter stalks and/or arrangements can obtain schedules by calling either of the show co-chairpersons:

Marguerite Vigil 935-2695
Ray D. Lyons 985-7030

GARDENING FOR THE YOUNG

The Denver Botanic Gardens is offering two programs this spring-summer for young gardeners: the Children's Garden, which has been a big success in the past, and a new program for advanced children, the Advanced Youth Garden.

The Children's Garden across the street from the Education Building, is for children in the fourth, fifth and sixth grades. They learn how to design, plant and take care of their own vegetable garden by actually doing the work on a plot assigned to them!

The Advanced Youth Garden is for three year graduates of the Children's Garden. They study more advanced topics, such as: French intensive gardening, growth of hybrids and varieties, grafting, soil preparation, alteration and analysis, and more! They too have their own plot assigned to them to work on. The formal name of this garden is the Ruth Porter Waring Youth Garden; it is situated to the north of the Education Building.

Both of the gardens have very competent instructors. Lee Schwade who is in charge of the Children's Garden is a Botanist-Horticulturist at the Denver Botanic Gardens; he was a high school science teacher previously. James Jackson in charge of the Youth Garden has his PhD in Botany and is presently teaching at the University of Northern Colorado.

Both programs are now open for enrollment. Hope to see you young gardeners this summer!

Sue Skubal*

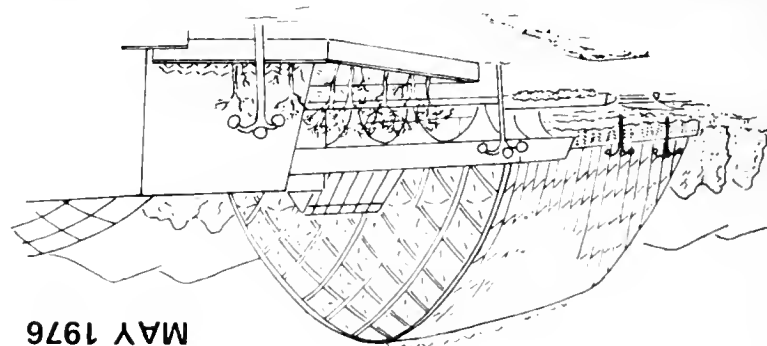
*Sue Skubal is a Student Intern from East High School; she is spending the semester at the Botanic Gardens to further her interest in horticulture.

* * * * *

Mr. John C. Mitchell, President of the Board of Trustees, has announced the election of the following members to the Board: Mr. Junius F. Baxter, Mr. William R. Thurston.

* * * * *

Memorial gifts have been received in honor of David Krohn and John Stein.

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MAY CLASSES

Remember the *Tree Walk* in Boulder on May 15. This walk will start by making the circuit of Central Park, which contains a number of quite unique deciduous and evergreen trees. We will proceed down Arapahoe Ave., with several side detours en route, ending at Folsom St. and returning to the Public Library parking lot either by local bus or on foot. Arapahoe is one of the oldest former residential streets, and has a number of relatively rare trees, especially a very large tulip tree, a large magnolia, an American chestnut, a sweet gum and enormous sycamores. About 40 to 50 tree species will be seen on this walk.

Meet at 9 a.m. at Boulder Public Library, Canyon Blvd. west of Broadway. Free. Limit 20, no sign-ups before May 3, please.

Dr. Brunquist will lead his regularly scheduled *Field Trip* on May 19 at 9 a.m. at 909 York St. People who have been inquiring about the purple flower carpeting the vacant lots around Denver should come and learn about this *Cruciferae* and other members of the Mustard family. *Chorispora tenella* is a weed which is such a recent introduction that it was not listed in the 1945 edition of Clements and Clements' *Rocky Mountain Flora*. Since then it has certainly made itself at home!

Dyeing with Plants will be taught on Friday, May 21 at 9 a.m., Classroom B. Mrs. Hoffman will then meet the group in the field in the morning of May 22, and that afternoon return to the classroom. The fee, which includes materials, is \$4.00 for members and \$5.00 for non-members. Limit 20.

If you are unable to attend but are interested in the subject, look at *Rocky Mountain Dye Plants*, a new book by Anne Bliss. It features such topics as Foraging for Dye Plants; Predicting Dye Colors and Variations; Fiber, Yarn and Fabric; Basic Amounts of Mordants; Preparing the Dyebath; and Testing for Light Fastness.

Finally, the *Pawnee Grasslands Trip* is scheduled for May 29. Meet at 909 York St. at 7 a.m. or at Crow Valley Park, along Highway 14 near Briggsdale at 9 a.m. Free, bring lunch. Limit 20.

Those who wish to study this fascinating area in more detail will be pleased to know that the Denver Audubon Society will again have its Grassland Institute this year. The Institute will convene at Briggsdale, Colorado, between June 13 and June 20, 1976. The Institute is an attempt to describe the grassland ecosystem in multi-disciplinary terms. Attention is given to effective utilization of the valuable grassland resources. Participants reside at the campground which is part of Pawnee National Grasslands.

Further information and registration materials may be secured by contacting Dr. Jim Wright, 1227 S. Quince Way, Denver 80231.

IKEBANA INTERNATIONAL

Ikebana International, Denver Chapter #66, is having its 9th Japanese Flower Show, "Festival of Flowers," on May 22 and 23, 1976 from 10 a.m. to 5 p.m. in the Horticulture Hall at the Denver Botanic Gardens, 1005 York St., Denver, Colorado.

There will be several schools of Ikebana included in the show: Chiko, Enshu, Ichiyo, Ikenobo, Koryu, Ohara, Sekka, Sogetsu, and Tosen.

Demonstrations of flower arrangements by teachers and members of the various schools will be given during each day of the show from a Pergola in Horticulture Hall.

Several members from the Colorado Springs Chapter of Ikebana International will be guest exhibitors.

Tickets may be obtained at the door or from Ikebana members for \$1.00 donation.

Thanks to so many of you who have contributed books and magazines for the Used Book Sale which will be held on May 7 and 8. We have room for more things if you have more to give. And do come to see what we're selling!



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



GARDENING TIPS FOR JUNE

This has been one of the most colorful springs in recent memory. Residents of Colorado who have lived here very long can appreciate the fact that we have had lilacs in full bloom and they were not harmed by a hard frost. Even the crabapples, peaches, and apricots have been favored with nice weather and some of the early flowering fruit trees will actually bear fruit.

June is probably the month when one would like to sit back and relax after all the activity in May such as planting the bedding plants etc., but there are some things that can be done now. These would include removal of weeds, keeping the soil surface cultivated to improve aeration and promote healthy plants, and to cut back the spent blooms of early flowering shrubs, tulips, iris, daffodils. In order to maintain healthy plants, however, avoid removing too much foliage because the foliage is responsible for building bigger bulbs or rhizomes for next year's show. If you want to promote even larger bulbs, try spraying the foliage with a soluble fertilizer made specifically for liquid application. Ra-Pid-Gro and similar products will give good results.

Spring flowering shrubs such as lilacs can be pruned lightly now but only to remove the spent blooms. Avoid shearing the tops because this will tend to make them branch heavily near the top causing the plant to shade itself out, resulting in a "leggy" look. Very early flowering shrubs, as well as flowering trees, are now in the process of forming the flower buds for next year. By the latter part of June most spring flowering trees and shrubs have already formed their flower buds and any top pruning after that will severely reduce the quantity of bloom next year.

Garden Pests

Slugs might possibly be posing a problem now and they can be controlled through cultural practices and also with some chemicals. You can discourage slugs simply by avoiding too frequent, light applications of water. Keeping the soil surface moist at all times will promote slug populations. Water deeply and only when needed. This technique will help the plants and also keep slugs away. Slugs do not like to crawl on a dry surface. It is best to check the plants for moisture needs and water only when the soil feels dry or when the plants begin to show a slight wilt.

Frequent afternoon rain storms, however, do not give us the chance to keep the soil dry. In that case, slugs can be controlled with Metaldehyde but because this is very poisonous, it is best used in a location where pets or birds cannot get to it. One trick is to use a length of black plastic pipe or similar tubing, place the Metaldehyde towards the center of the tube and then place it in the garden in shaded locations such as under shrubs.

Another method is to bury coffee cans and other containers in the ground so that the rim is level with the soil surface. Pour a small amount of beer in each of the cans. Slugs are attracted to the beer, will crawl into the can and drown. What a way to go!

The early part of the month is a good time to look for the crawler stage of oyster shell scale and also the pine needle scale. Oyster shell scale will be found on dogwood, cottonwood, aspen and other common trees and shrubs. The scales themselves resemble tiny grayish shells. These have been present all winter. Underneath the scales are the eggs that would now be hatching. Diazinon and malathion will give good control. Pine needle scale is white and is present on the needles. It sometimes resembles tiny flecks of white-wash or paint. It is not only found on pines but also on spruce. Malathion and diazinon are also appropriate for the crawler stage of these. It is generally best for scale control to apply three applications, spacing them about 7 to 10 days apart. This will catch some of the overlap in the hatching of the crawlers.

The early part of this month is also the time when tussock moth does the most damage to spruce, fir and Douglas-fir. These caterpillars work at the top of the tree and quickly devour the soft growth, causing the trees to turn brown. Sometimes it is hard to tell whether they are active in the trees because they work at the top which is difficult to see. To detect them, stake down a piece of white paper at the base of the tree near the trunk and look daily for the presence of bits of chewed needles and yellow droppings. If you see these, control measures are warranted. On large trees, use the services of a professional arborist but if the trees are small enough that you can reach the top you can use your own spray equipment. Diazinon will give excellent control applied at least twice about 10 days apart. It is important to thoroughly wet the entire tree with the spray.

Roses

June is the month for roses with most roses being at their peak at the end of the month. When you cut flowers for bouquets, or to remove withered blooms, be sure to make the cut just above a leaf that has five leaflets. This will then promote a new shoot for another flowering stock. It is generally best to cut above a five-leaflet leaf that is pointed towards the outside of the plant. This will promote a more desirable shape to the shrub. Following the peak blooming period towards the end of June, apply a 5-10-5 fertilizer to the roses, cultivating it 2 or 3 inches deep into the soil. About one cup of fertilizer per plant distributed evenly over the surface is adequate. After applying the fertilizer, water it well. This will help to strengthen growth for continuous summer flowering.

As new growth develops on roses, it is sometimes afflicted by powdery mildew, particularly if the roses are in a protected spot. Applications of benlate on a weekly basis will reduce and prevent this damaging fungus. Benlate is an expensive material but is available in small quantities at some of the garden centers. It only takes a small amount however, and is extremely effective against mildew. If benlate is not available, other alternatives include: Mildex, Karathane or Captan. These materials are preventative only so must be applied *before* mildew conditions occur. You can also reduce the incidence of mildew by avoiding frequent watering of the foliage.

After you have taken the precautions mentioned, you can really sit back and relax!

Dr. J. R. Feucht

AUTOGRAPH PARTY

Several Colorado authors will be honored on June 17 from 2 to 4 p.m. in Horticulture Hall. Now is your chance to come, have a cup of punch, and talk with people whose work you have admired.

For those interested in wild flowers, Berta and Bill Anderson, the new Editors of *The Green Thumb* magazine, have written how many received their names. Botany, history and biography are all included in *Wild Flower Name Tales*.

George Kelly, who has written the bible for this area, *Rocky Mountain Horticulture*, will have two new books hot off the press! Plan to add these to your collection.

Another landscaping book, *Grow Native: Landscaping with Native and Apt Plants of the Rocky Mountains* by Sam Huddleston and Michael Hussey was reviewed in the Spring 1976 issue of *The Green Thumb*. Some particular helpful features include three "watering schedules" which should be of considerable assistance to everyone. Also very specific suggestions are given on the planting of bareroot trees and shrubs, container-grown and/or marketed, and those which are balled and burlapped.

The Enchanted Mesa by Url Lanham deals with the natural history of the beautiful forested table lands beneath Boulder. Mr. Lanham concentrates on the conspicuous trees, shrubs and wildflowers of the area plus the animal life that may be seen.

Gene and Dee Milstein from Applewood Seed Company will be available on June 17 to discuss *Water, Light and Love*. This complete guide to growing healthy plants from seeds, emphasizes wildflowers, tropical plants, culinary herbs and other Applewood specialties.

All of our members who are familiar with Ruth Ashton Nelson's wild flower identifications books will be delighted to know she too will be present with her new book, *Plants of Zion National Park*. It promises to be another "must" for anyone interested in this area and its flora.

Many of the illustrators will be present also and although Anne Bliss and Ann Zwinger cannot attend, their books will be available for purchase.

It promises to be quite an affair so remember 2 to 4 p.m. June 17 in Horticulture Hall. All are welcome.

JUNE CLASSES

Members should have the *Summer List of Classes* in their hands by now and will note that many opportunities are provided to enjoy living in Colorado.

Those of you who were Johnny-on-the-Spot and signed up for *How to Use a Botanical Key* will really enjoy the field trips to follow for you will understand taxonomic vocabulary and concepts. Dr. Wingate has limited her class to 12 so that all may identify plants rather than depend on someone else. Bring a hand lense and *Rocky Mountain Flora* and come on June 14 to Classroom A at 9 A.M. Free.

Scheduled field trips include a chance to visit the new unit of the Gardens on June 11, the Walter S. Reed Botanical Garden in Upper Bear Creek. Travel Highway 74 to Evergreen (through Bergen Park or through Evergreen). Take the lower fork at Upper Bear Creek Inn near Evergreen Lake. Follow this Upper Bear Creek Road about 5 miles and turn right at sign to Mt. Evans Elk Management Area and Jefferson County Lab. School. The Reed Arboretum is about 1/2 mile beyond turnoff. Two stone pillars mark the entrance. Meet there at 9:30 a.m., or if you prefer drive up with a group that will meet at 8 a.m. at 909 York Street. Mrs. Velma Richards and other members of Around the

Seasons have been studying the plants of this area for several years. Please sign up after May 27. Limit 20.

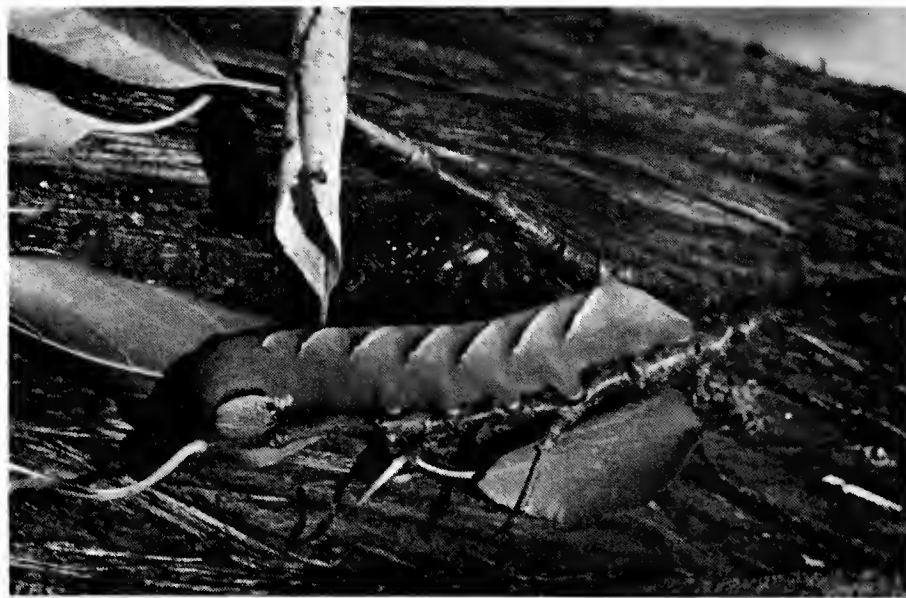
Dr. Brunquist will lead his regularly scheduled trip on June 16. Meet at 909 York Street at 9 a.m. Bring lunch. All welcome.

Join the crowd on June 19 at 8 a.m. at the Gardens for a trip to Colorado Springs, or meet us at 9:15 a.m. at the Native Garden of the Demonstration Garden of the Horticultural Arts Society. This is located at the intersection of Mesa Road and Glen Avenue in Monument Valley Park. Take I-25 to the Uintah Exit, turn left under I-25 and the railroad to Glen Avenue where you turn right for about two blocks to Mesa Road. As a special treat, Lucian Long, who is leading the trip, expects to take the group up the Old Stage Road and show *Cypripedium calceolus*, Yellow Lady's Slipper. This plant is rarely seen for as Dr. Weber says, it has almost been exterminated by wild flower "lovers". Limit 30. No sign ups before June 4, please. Free.



Different flowers will be seen as the tundra on Mt. Goliath is the next area to be visited. Meet at 8 a.m. at the Botanic Gardens House or at 9 a.m. at Echo Lake Lodge on June 21. Dress warmly for often we can expect a storm at that altitude. Limit 20.

Have you wondered how the Zoo attempts to control insect populations in the new aviary? Since the birds can't be removed chemical sprays cannot be used; therefore, *biological controls* may be the answer. Mr. Keenan, who is helping them with this problem, will show slides and describe some effective methods of control. Meet at 9 a.m. in Classroom C on June 5. Free and all welcome.



Finally, students under 21 years of age will want to join Dr. Feucht for the next classes in the NJHA program. On June 18 at 909 York and June 29 in Classroom A, both at 9:30 a.m. *Summer Characteristics of Woody Plants* will be discussed. Free.

The following is a list of shade and ornamental trees planted at the Denver Botanic Gardens this spring.

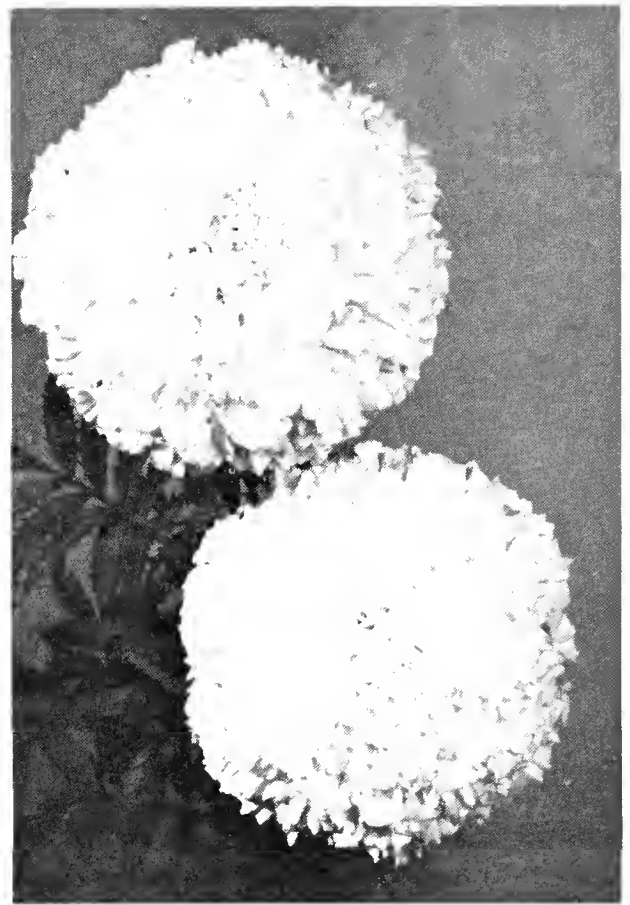
Acer saccharum 'Green Mountain'
A. platanoides var. *schwedleri*
Aesculus glabra
Amelanchier laevis
Betula papyrifera
B. pendula var. *tristis*
B. pendula 'Youngii'
Carpinus caroliniana
Celtis occidentalis
Cercidiphyllum japonicum
Cercis canadensis 'Pink Charm'
Chionanthus virginicus
Cotinus coccygria 'Velvet Cloak'
Crataegus crus-galli
C. lavalleyi
C. viridis 'Winterking'
Eucommia ulmoides
Euonymus europaea
Fagus riversii
Fraxinus americana 'Autumn Purple'
F. pennsylvanica var. *lanceolata* 'Summit'
Ginkgo biloba
Gleditsia triacanthos var. *inermis* 'Skyline'
Gymnocladus dioica
Hamamelis japonica
H. mollis
H. virginiana
H. vernalis
Juniperus chinensis 'Keteleeri'
Larix decidua
Malus 'Beverly'
M. 'Dorothea'
M. floribunda
M. 'Katherine'
M. 'Liset'
M. 'Mary Potter'
M. 'Radiant'
M. 'Red Jade'
M. 'Snowdrift'
M. 'Tina'
M. 'Van Gaurd'
M. zumi var. *calocarpa*
Myrica pensylvanica
Nyssa sylvatica
Ostrya virginiana
Phellodendron amurense
Philadelphus 'Silver Showers'
Picea englemanni var. *glauca*
P. omorika
P. pungens var. *glauca* 'Hoopsi'
Picea pungens 'Mission'
Pinus cembra
P. nigra
P. strobus var. *fastigiata*
P. strobus var. *nana*
P. sylvestris
Populus sargentii
Potentilla 'Jackmanni'
Prunus 'Hally Jollivette'
Pseudotsuga taxifolia
Pyrus calleryana 'Bradford'
Sophora japonica 'Regent'
Sorbus aucuparia
Ulmus camperdownii
Viburnum burkwoodii
Viburnum X carlcephlum

Members probably have read of the end of the 56 year old search by Burpee's for a white marigold. On August 28, 1975 David Burpee paid \$10,000 to a home gardener, Mrs. Alice Vonk, of Sully, Iowa.

In its search for the White Marigold, the Burpee Company has dealt with some unusual correspondence. One gardener wrote: "If anything should happen to me before I win the money, I want it to go to the Soldiers Home, not my son". Another hopeful gardener said: "If you get some white marigold seeds from someone in my town, they will be my seeds. I had the plant marked and my neighbor stole the seeds because they are all gone". Burpee did receive seeds from a neighbor.

This payment to Mrs. Vonk makes the White Marigold the costliest flower in the world. In addition to the \$10,000 payment, the cost of Burpee research and of running the trials to test thousands of hopeful entries from gardeners has totalled more than \$250,000.

For a follow-up story on this plant, see *Horticulture*, February 1976.



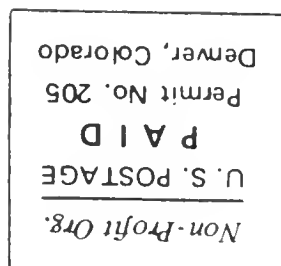
Burpee Seeds

AND MORE ABOUT SEEDS

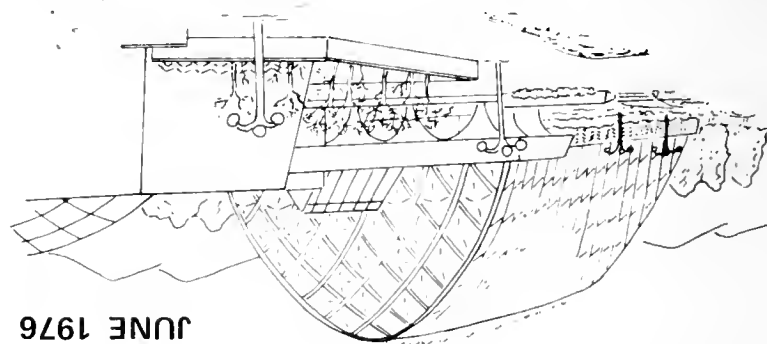
And if you are interested in another plant with a most unusual color, Goldsmith Seeds, Inc. has announced a big break-through with a really bright yellow petunia. The new variety is appropriately named Summer Sun. Over ten years of breeding work were required to produce this striking new color.

Summer Sun belongs to the multiflora or "many flowered" class of petunias. A dozen plants will produce hundreds of 2 inch clear yellow flowers with deeper golden yellow lines. Summer Sun looks best when planted in a large bed for mass color effect or when combined with a contrasting color such as deep blue. Although individual flowers are not as large, nor plants quite as vigorous as other hybrid petunias, Summer Sun makes a striking display. Plants are available this spring in most stores where bedding plants are sold or seeds can be ordered from Burpee or Park catalogs.

When dealing with seeds, remember "An optimistic gardener is one who believes that whatever goes down must come up". Leslie Hall.



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YOU DID IT AGAIN!

The Helen Fowler Library is richer by \$3,976.09 and it's all because you responded to our need for books for the Sale and then came to see what others had contributed, and bought, bought, bought. We're really grateful to you and so will be all the people who will use the many volumes your money will add to the Library collection over the coming year. Those of you who are supporting us for the fourth time know that all the money which is raised through this book sale is earmarked only for the purchase of new acquisitions to the Library collection. To the newcomers, welcome, and remember that we collect all year long for the sale and we'll look forward to seeing all of you again next year. Really, thanks.

THE DENVER BONSAI CLUB will present its annual exhibition of trees in miniature at the Denver Botanic Gardens, Saturday, and Sunday, June 19th and 20th, from 10 a.m. to 5 p.m. daily.

Over 100 trees ranging in age from several months to 300 years old will be on display at this popular show, with demonstrations to be presented each day.

The public is cordially invited to attend.

JUNE LOBBY COURT

Coming in the June Lobby Court display will be some gesneriades including gloxinias, streptocarpus, and achimenes and calceolarias, primulas and ranunculus. All this leads up to a begonia display later in the month.

HAWAIIAN ORCHID FILM

A free film on Hawaiian orchids will be shown on June 12 at 1:30, Classroom C. It is a color film and will last approximately 30 minutes. So if you are interested in orchids or are planning to visit Hawaii, be sure to attend.

A BIG THANKS!

A big thank you for Joan Fransen and other volunteers who spent time and effort in contributing to making plant sale '76 a big success. Thanks again, we couldn't have done it without you!

SUMMER GUIDE SCHEDULE

This summer tours will be scheduled for the months of July and August, starting at 10:00 a.m. on Tuesday, Wednesday and Thursday. This change has been made so that the Botanic Gardens can accommodate the children that are in the year-round school programs.

Also a thank you to Bev Hanselman who has done an excellent job in scheduling the tours — she is turning over her position to Glin Duxbury.

Memorial Gifts have been received in honor of:

Mrs. David F. Hall
Mrs. Isabel T. Peel
Mr. Howard H. Sidwell, Jr.



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GARDENING TIPS FOR JULY

July may seem to be a strange time to talk about spring and as delightful as our spring was this year, it is possible to witness spring all over again and beat the heat at the same time.

Spring is just now beginning at the timberline areas of the Colorado Rockies and now is a good time to view the colorful display of spring flowers in such places as Trail Ridge, Loveland Pass, or better yet, the Mount Goliath Alpine Trail on Mount Evans. It is possible during July to view more than 50 different kinds of alpine flowers in bloom. Along the Mount Goliath Trail you will also find a group of picturesque bristlecone pine, some of which have been dated to being at least two thousand years old.

The spectacular bloom along the trail must be seen to be appreciated. Be sure to take protective clothing because sudden storms, even rain, sleet and hail, may occur despite the fact that it is July. To assist you in identifying the plants you may wish to take along a book entitled, "Meet the Natives" by M. Walter Pesman. This book is available at the Denver Botanic Gardens bookstore. A guide of some of the more common flowers is available in mimeograph form by simply calling 355-8306. In the interest of preserving the flora and tundra, please be careful to stay on the trail so that all the beauty can be enjoyed for generations yet to come.

Care of Bug-Chewed Plants

An extremely dry May and a caterpillar-ridden June has left its toll in our gardens. To help your trees and shrubs recover from defoliation caused by caterpillars, give them a feeding using either a deep root method or a foliar feeding with a totally soluble fertilizer designed for that purpose. Several types are available such as Ra-Pid-Gro, Stern's and Morgro Liquid. Be sure to dilute according to directions for foliar feeding. Too much can cause injury; too little does not do an adequate job. A foliar feeding, of course, can only be done when there is sufficient foliage on the plant to absorb it. I have seen some trees and shrubs so badly defoliated that root feeding is the only possible method. The idea is to help boost the nutrition of the plant early enough in the season so that it can develop some growth to carry it into the winter months. Most defoliated trees and shrubs will also show a surprising recovery.

If the top of your spruce trees was lost this year from tussock moth damage, do not prune it out. Frequently, new growth develops from "reserve" buds once the caterpillars have been eliminated.

Spider Mites

This is the month to look out for infestations of spider mites. An easy way to look for them is to hold a piece of white paper beneath a branch and vigorously shake the branch over the paper. If mites are present you will be able to see them crawling on the paper. Presence of numerous webs is also a sign of mites. They will also leave a salt-and-pepper or stippled pattern on the leaves caused by

their feeding. Mites can be controlled by the use of Kelthane or Chlorobenzilate.

Vacation Care

If you plan to be away for a vacation this month be sure to include your yard in the planning. Get rid of all the pesky weeds ahead of time and take care of the major insect control problems before leaving. It is best not to ask a youngster to do these chores. If you have someone taking care of the lawn make sure to leave instructions on the watering with particular attention to areas that need spot watering because of peculiar soil problems. Lawn mowing is very important. If possible, have the person use your own mower, adjusted to the proper height of cut. A lawn can be very badly damaged by a lawn mower set too low or not properly sharpened. Be sure to point out all the hazards to be looked out for such as sprinkler heads and high spots.

Vegetable Pests

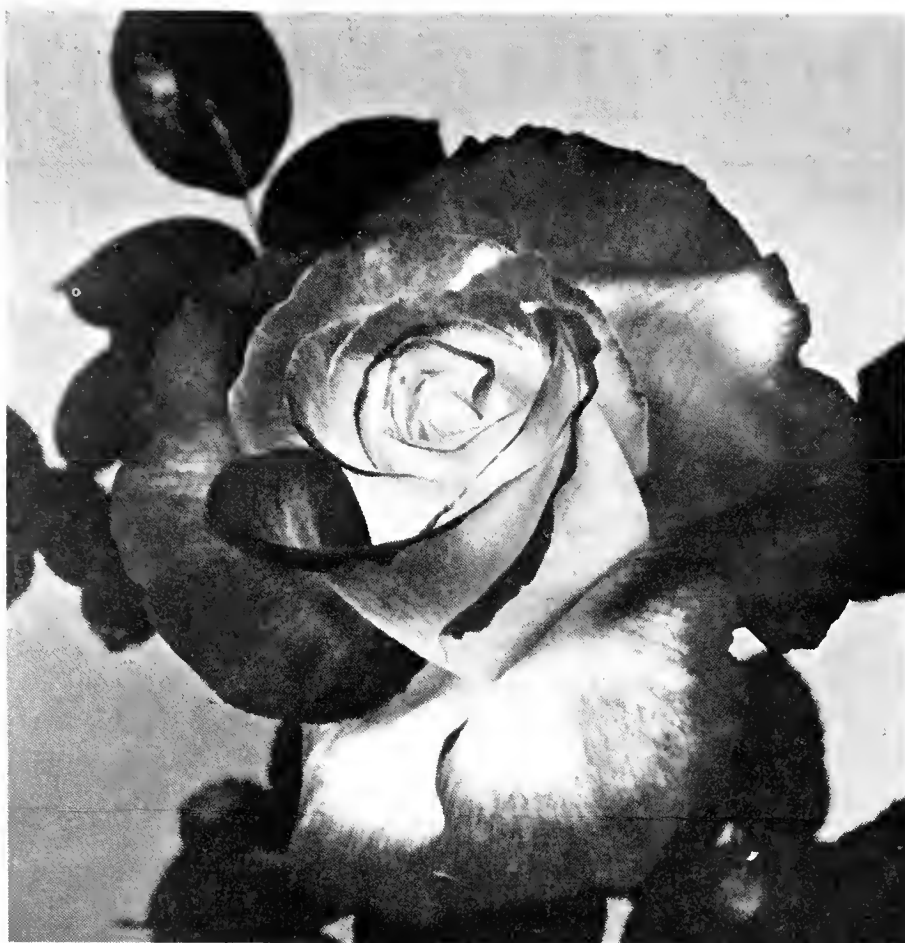
Begin to look for signs of the tomato horn worm now and take appropriate action when they are visible. Sevin does a good job in controlling them but if you have only a few plants you can pick the worms off by hand. Sevin will also control the Mexican bean beetle, potato beetle and most other foliar-feeding insects in your vegetable garden. It will not, however, give good control of leaf miner in spinach, beets, or chard. Malathion and Diazinon give reasonably good control. If you use Diazinon be sure to allow for the 14-day waiting period before harvesting. The use of the wrong pesticide in vegetable crops renders them useless. Most systemic insecticides cannot be used on vegetables. Chlordane is no longer recommended, being banned by the EPA, but if you are having problems with soil-borne insects like cutworms or wireworms, use Sevin instead. Isotox and similar formulated insecticides, while designed for general purpose on trees and shrubs, are not suitable for edible crops. Be sure to check the label before using. If not indicated for edible crops, don't use it for that purpose.

J. R. Feucht

* * * * *

A Regional meeting of the American Association of Botanical Gardens and Arboreta will be held at the Denver Botanic Gardens from July 15 - 18th. All sorts of entertaining and educational events have been planned for our guests, including a slide show on Colorado Wildflowers by Loraine Yeatts; a tour of Summit Lake and Mt. Goliath, with return by way of Central City; talks by George Kelly, Larry Watson and Al Rollinger on Rocky Mountain horticulture and landscaping with native plants; a discussion of "Water Problems in Bermuda" by Andrew Pierce and on "Southern Arizona Plants Used in Landscaping" by Hubert L. Earle. The final banquet will feature Dr. Howard Reynolds, who will present an illustrated talk on "Plants Along the Trans-Siberian Railroad".

Members of the western region of AABGA will be in attendance at this exciting conference.



WHY DID ALL-AMERICA ROSE SELECTIONS INTRODUCE ITS 1977 AWARD WINNING ROSES IN JUNE 1976?

Many people are puzzled by the AARS procedure of presenting its award winning roses to the public long before plants of those varieties are obtainable at rose nurseries and garden centers.

This question of "why" was put to George Rose (actually an old Scottish family name) Director of Public Relations for AARS. He explained that AARS wants the public to be able to preview the new award winners prior to their being offered for sale by the commercial growers.

To make that possible AARS has accredited some 114 of the larger public rose gardens throughout the United States as being well maintained and well patronized by the public.

Plants of the new award winners are sent to each of these gardens in the spring preceding the year of their introduction. For example, plants of the 1977 winners were sent to the accredited public gardens at their planting seasons in the early spring of 1976. The winners are 'First Edition,' a plant with true floribunda growth habit and luminous coral flowers; 'Double Delight', one of the most outstanding hybrid teas produced in many years. This has creamy white buds which open to disclose large areas of carmine red along the edges of the petals. With the maturing bloom, the red areas merge so that the flower appears to be a red rose; 'Prominent' is a brilliant, hot orange grandiflora winner which is particularly outstanding for use as a cut flower.

With the June announcement of these winners, people interested in roses are enabled to see them as actual blooming plants by going to the closest of the 114 accredited gardens. There they can judge for themselves the worth of these roses long before they are ever offered for sale. The Denver Botanic Gardens received 'Double Delight' of the winners and this has been planted near the Herb Garden and the Pylons.

Lists of the Accredited Public Rose Gardens are available without charge from George Rose, Director of Public Relations, All-America Rose Selections, P.O. Box 218, Shenandoah, Iowa 51601.

JULY CLASSES

Field trips will fill the month of July, as we all head to the hills to enjoy nature! A reminder may be due: One of the most convenient books to carry (and easiest to use) is *Meet The Natives* by Walter Pesman. This book keys plants by color and by altitude and is available in the Gift Shop.

July 8 join the group on Mt. Goliath. Meet at 8 a.m. at 909 York Street or at 9 a.m. at Echo Lake Lodge. Bring lunch. Limit 20; no signups before June 24, please.

July 20th will find 20 visitors in *Auraria*, the old section of Denver. Dave Luebbers, the leader of the group, is currently writing a report of the work of Landscape Committee of Historic Denver at this site so the trip should prove to be interesting both horticulturally and historically.

Since parking is very difficult in that area, perhaps it would be fun to make this a bike ride. That would make it easier to get around and more in keeping with the period! Ninth Street is between Champa and Curtis on the south side of Cherry Creek. Meet the group there at 8:30 a.m. or if you wish to car pool, at 8 a.m. at 909 York Street. Limit 20; no sign-ups before July 8, please.

Back to the mountains on July 21 when the regularly scheduled Wednesday trip will journey to Mrs. Shepherd's cabin above Bailey. Please meet at 909 York Street at 9 a.m. Bring lunch. All welcome.

A similar area to the above will be visited on Saturday, July 24. *Camp Freeman* is property owned by Colorado Womens College and Miss White, a biology professor from CWC, will lead the group. Meet at 8 a.m. at 909 York or at 9 a.m. at Shaffers Crossing. Take 285 West. Bring lunch. Limit 20. No sign-ups before July 9, please.

As a special treat, Dr. Denham will lead a trip to see tundra plants on Loveland Pass! This is scheduled for July 17. Meet the group at the Arapahoe Forest Service Visitors Center at the Mt. Evans Exit of I-70 in Idaho Springs at 8:30 a.m. Bring lunch and remember to include liquids for that altitude can be very dehydrating. The limit is 20 people so call now if you wish to attend.

Reminder for all field trips —

If you are signed up but can not attend, please be courteous enough to call and cancel so your space may be given to someone else!

* * * * *

The National Junior Horticulture Association program will feature a class on *Annuals* on July 9. This is free and open to students under 21 years of age. Meet at 9:30 a.m., Classroom A.

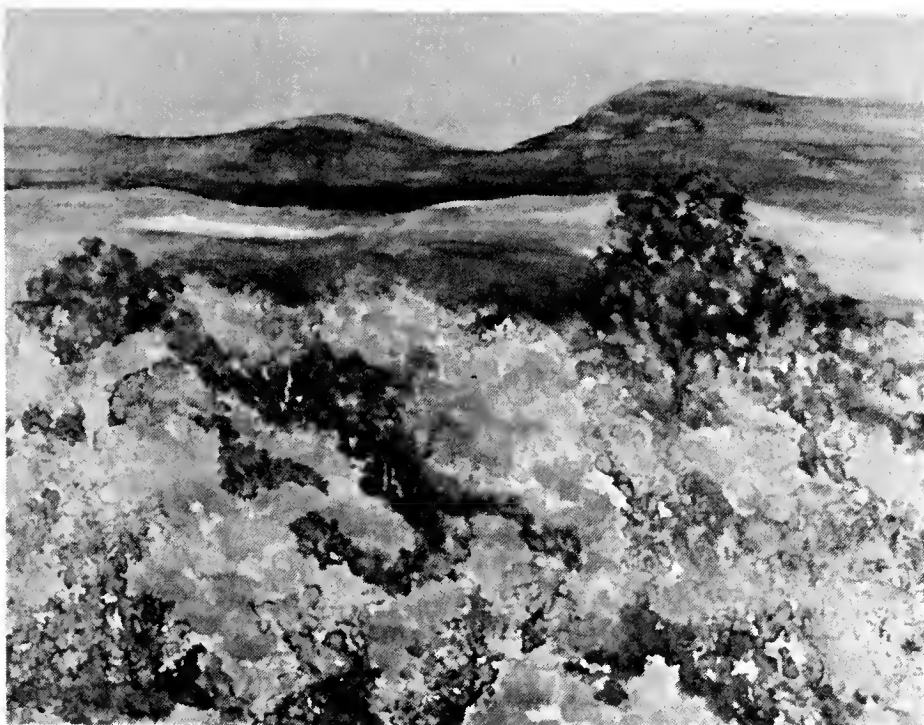
Finally two opportunities will be provided to learn about saving the bounty of your vegetable garden. *Canning and Freezing Garden Produce* will be taught on either Tuesday, July 27 at 9 a.m. in Classroom B or if the evening is more convenient, on July 28, at 7 p.m. also in Classroom B. Free.

* * * * *

From *Flower and Garden* comes this information: Scotts will identify lawn weeds for you if you send a dry, complete specimen tightly wrapped in aluminum foil to:

Scotts Weed — Ident
Marysville, Ohio 43040

They will answer in a few weeks with the name of the plant and suggestions for its control. There is no charge and no obligation.



"SPRING TAPESTRY"

watercolor by Wilma Stapleton

The Colorado Watercolor Society will have its Fifth Annual All Watermedia Exhibition in the Botanic Gardens Horticultural Hall from Thursday, July 8, through Wednesday, July 21. Show hours are 10 a.m. to 4:30 p.m. daily.

All the paintings are for sale and approximately seventy framed paintings will be on display with smaller unframed works available. Members of the group are active in the art community of Denver and exhibit frequently in shows throughout the state.

Juror for this exhibit will be Rob Gratiot, art teacher at the Emily Griffith Opportunity School.



Solange Gignac, librarian, Helen Fowler Library, attended the annual meeting of the Council on Botanical and Horticultural Libraries co-hosted by Longwood Gardens and the Philadelphia Horticultural Society. The C.B.H.L. members decided to initiate a pilot program involving recording of lists of plants, seed and nursery catalogs of particular regions. Local catalogs published, printed, distributed before 1920 are of particular interest. Should you have any old catalogs, local or not local, please consider giving them to the library or allowing your holdings to be recorded. These catalogs are historically valuable because they may be the only record of plant introductions to a particular region. Please call Solange Gignac, librarian, at 297-2547, Ext. 24, if you would like to participate in this program.

THOUGHTS FOR THE FOURTH

Gardening in 1776 was strenuous . . . no high analysis plant foods, no convenient garden center for the latest in plants or chemical, and no power tools. Elaborate seed catalogs were uncommon in the colonies and newspaper announcements of the arrival of shipments of seeds were written in a style that could politely be described as imaginative.

Eastern settlements, mostly clustered along navigable streams or on the coast line were hemmed around by forests that sheltered birds and wild beasts of all kinds.

Among the common folk, gardening was geared mostly to producing food and herbs. Flowers might be limited to one or two kinds to brighten the doorway.

Only around the older towns was gardening a genteel pastime. The colonies did have an economic and social elite and they patterned their flower and herb gardens after the elaborate European fashions of the day. Good gardeners were scarce and high wages were paid to lure English and Scottish landscape designers and gardeners.

At least two of the Founding Fathers were keen gardeners. George Washington wrote:

"The more I am acquainted with agricultural affairs, the better I am pleased with them; insomuch, that I can nowhere find so great satisfaction as in those innocent and useful pursuits. In indulging these feelings, I am led to reflect how much more delightful to an undebauched mind is the task of making improvements on the earth than all the vain glory which can be acquired from ravaging it . . ."

Thomas Jefferson thought:

"No occupation is so delightful as the culture of the earth, and no culture comparable to that of the garden. Such a variety of subjects, some one always coming to perfection, the failure of one thing repaired by the success of another, and instead of one harvest a continuing one through the year."

A helpful suggestion from the *Avant Gardener* is that house plants might enjoy a summer vacation, too. Most tropicals, with the exception of African violets and other gesneriads, can be put outside. Some such as philodendron, rubber plants and dieffenbachia will need protection provided by a covered porch, breezeway or lath house. Other kinds may enjoy the brightest light available.

Be sure to check your light intensity, watch your plants to see how they are responding and remember to acclimatize them by gradually moving them out. Do the same when they are ready to return inside in the fall.

ROCKY MOUNTAIN BROMELIAD SOCIETY

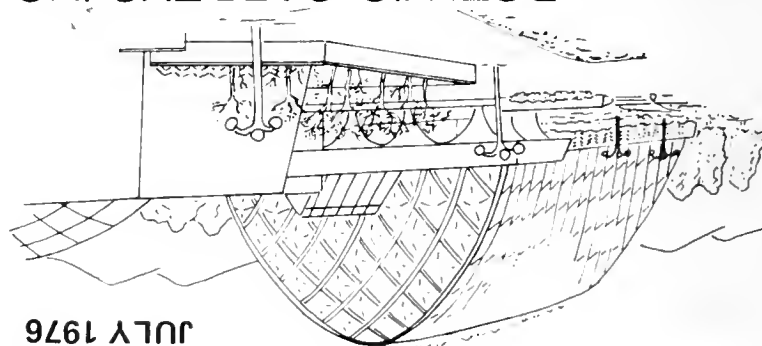
An organizational meeting will be held at the Denver Botanic Gardens, in classroom 'B', on July 14th, 1976 at 7:30 p.m.

Larry Mason, Scientific Editor of the Journal of the Bromeliad Society will demonstrate techniques of proper care and propagation of Bromeliads.

Mr. Mason has published a series of articles on the evolution of Bromeliads.

For information call Lawrence Mason 233-0577 or Paul Earle 757-8825

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



JULY 1976

"Heritage of Splendor" is the title of the film to be shown on July 10th at 1:30 p.m., Classroom C. The camera follows Americans as they enjoy the forests, mountains, parks and beaches and records their littering of both public and private property. Trash only becomes trash after it has first served a useful purpose. It becomes litter only after people thoughtlessly discard it. As taxpayers we pay dearly and in many ways for this messy habit. There is a bit of humor and some magnificent photography of our great scenic splendors. All welcome.

LOBBY COURT

Tuberous begonias, one of the public's favorite displays, will be featured in the Lobby Court in July. We always receive many favorable comments about these glorious blossoms, so plan to visit and admire them then.

A donation earmarked for the Lobby Court has been received in memory of Hazel Moore. Thank you so much.

A special weekend is planned on July 24-25 from 9 to 5 p.m. At this time the daylilies will be at their best and members of the Hemerocallis Society will be on hand in the outside garden to answer all your questions about these lovely flowers. Printed information as to care and suggested varieties will be available also so plan to come, admire, and learn.

\$100.00 REWARD FOR RETURN OF PHOTOGRAPHIC EQUIPMENT TAKEN FROM THE MYCOLOGY LAB. NO QUESTIONS ASKED. CALL 297-2547 X 7.

TERRACE AND GARDEN TOUR (July 22 - Thursday, 10 a.m. - 6 p.m.)

The annual Terrace and Garden Tour will take place Thursday, July 22, between the hours of 10 a.m. and 6 p.m. Eight very special gardens in the Cherry Hills Village and Greenwood Village areas will be featured this year. The gardens are:

1. Mr. and Mrs. Robert McCammon
3461 South Cherry
2. Mrs. Doris Vickers
2 Sunset Drive
3. Mr. and Mrs. H. J. Bleakley
35 Sunset Drive
4. Mr. and Mrs. Jerry Bayless
4737 South Lafayette
5. Mr. and Mrs. Ron Lundquist
1 East University Lane
6. Mr. and Mrs. William Thurston
5205 South Steele
7. Barbara and William Thulin
5505 South Steele
8. Mrs. Mary Mead
5555 South Steele

The price of the tickets will be a \$5.00 donation to the Denver Botanic Gardens. Tickets may be purchased at the Conservatory Gift Shop (297-2348), from any Botanic Gardens' Guild member, or the first and last gardens on the day of the tour. Iced tea and cookies will be available in the Thulins' garden, with its lovely view of the mountains. Among the features of interest in the gardens chosen this year are swimming pools in natural settings, bonsai arrangements, orchid culture, and vegetable gardens. The gardens are well grouped so that driving is easy and tickets contain a map giving directions to each garden.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



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GARDENING TIPS FOR AUGUST

Tomato worms, mites and thrips are the creatures we should watch out for this month. As a matter of fact, mites and thrips are already in high gear on quite a wide variety of plants in the home grounds.

Perhaps you have noticed the "hummingbird moths" flying around your garden in the evening hours. This rather interesting and colorful moth, while feeding on the nectar of your flowers, is also laying eggs on your tomato plants. They are the adult stage of the tomato horn worm. The eggs are large enough to be visible, but the moth usually lays them in cleverly disguised places. Soon the eggs will be hatching and the young caterpillars will begin their voracious feeding.

It is always surprising how fast a tomato worm can grow and how much he can eat. The worms also seem to eat more while a gardener is on vacation than when at home. At the first sign of feeding, apply Sevin at the manufacturer's recommended rate. If you are going to be away, make an application of Sevin just before departing in order to give protection until your return. The earlier you control it the less pesticide needed and the less frequent applications. Be sure to apply to the lower leaf surfaces as well as the upper.

If you prefer not to use chemicals, pick off the worms, at least on a weekly basis. Some kids enjoy doing this and could be rewarded with a nickel a worm or whatever you choose to pay. There are, however, two disadvantages to this method. First, you generally have to wait until the worms are big enough to be readily visible. By that time they have already done the damage. Second, a few worms always seem to escape the eye, particularly in dense tomato plantings that are not staked and are sprawling on the ground.

Spider mites are eight-legged creatures which are not actually insects. They are tiny, thus often escaping detection until plant damage has occurred. In evergreens such as Pfitzer junipers, the damage will first be noticed as an off-color of the plant, appearing almost as if it is drying up. Heavy infestations will result in a complete browning of the plant. On broadleaf plants, spider mite infestations take on a "salt-and-pepper" effect or a stippled look to the leaves. Severely infested leaves will turn brown and dry up.

Spider mite control is not difficult to achieve because there are excellent miticides available. The one most readily available is Kelthane. This chemical is especially designed to have sufficient residual to catch the hatching young as well as stop the adults.

For those who do not wish to use miticides or any type of chemical control, a method that has proven somewhat satisfactory for reducing mite populations is to syringe the plants frequently with a strong stream of water. There are, however, disadvantages to this method. The strong stream of water may reduce mite populations but it may also severely damage flowers.

Thrips are even smaller than mites and are quite evasive, making detection and control a bit difficult. Thrips are responsible for damage to rose buds, frequently preventing them from opening properly. When the buds do open, they are very much distorted. Thrips also feed on a wide variety of garden flowers. Damage from thrips on foliage is usually a

silvering effect. This is caused by the thrips sucking out plant juices from the cells; the empty cell cavities then take on a silvered appearance.

One of the thrips' most favored woody plants is the privet hedge. A heavily infested hedge will suddenly have a silvery look, followed by browning. If not controlled, defoliation will occur. Control of thrips is also relatively simple, particularly for those that feed on the foliage. Malathion, applied in 2-3 sprays spaced about seven days apart, will generally do the job. For those thrips affecting the flower buds of roses, a systemic insecticide may be needed. These should be used with caution. An overdose will be harmful to the roses.

Watering continues to be a problem, especially in lawns. One of the greatest difficulties is the spots of heavy clay soil or "clay lenses" which don't seem to take up water readily and dry to a hard-packed surface in a short period of time, particularly in 90° weather. This situation cannot be improved by adding more water. As a matter of fact, adding more often accentuates the problem by cutting off the air from the root system and further compacting the soil. The solution is to aerate. This subject was covered in previous Green Thumb gardening tips but should be repeated. For small areas, a hose-attached soil needle will do the job but it would be very time-consuming for large areas. For the latter, rent a drum aerator. Before using it, however, be sure the soil has some moisture in it. Water a few days prior to renting the machine. The machine does not work well in a muddy soil which has been recently watered nor does it work well on a hard clay.

The practice of watering frequently as a result of the hot weather has also caused stress in trees and shrubs in the lawn area. In many ways, trees and lawns are not compatible. While trying to satisfy the watering requirements of the lawn, you can easily overwater (under-oxygenate) the root zone of your trees and shrubs. The most severely affected are those species that are accustomed to a gravelly, well-drained soil such as pines and firs. Swamp species like cottonwoods and willows can tolerate this better. If you have a sprinkler system, either change the heads that are near the trees and shrubs to divert the water away from them, or close them off entirely and hand water the trees and shrubs as needed. Watering trees with a soil needle is a good method in that it does some aeration at the same time. Be sure to angle the needle away from the tree — not into it.

Dr. J. R. Feucht.

* * * * *

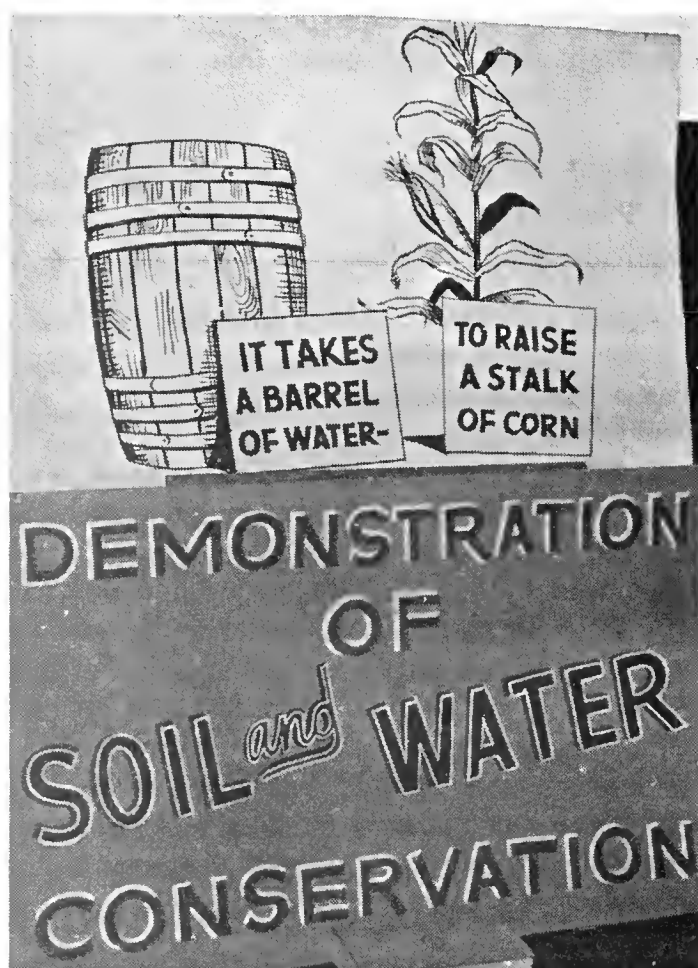
Question Time

How many of our members can name the patron saint of gardeners? St. Fiacre, born in the late 500s, was an Irish hermit who lived in County Kilkerry. After numerous disciples disturbed his solitude there, he moved to northern France. He established a monastery at Meaux and became famous for his curing of diseases, his ascetic life, and his daily labor in the garden. Appropriately enough he is always represented with a spade. His saint's day is August 30th.

AUGUST CLASSES (and more)

The regularly scheduled *field trip* led by Dr. Brunquist will meet at 909 York Street at 9:00 A.M. on August 18th. All welcome.

N. J. H. A. participants can do no better than to attend County Fairs to learn about vegetables. There one may see all sorts of unusual plants like celeriac, New Zealand spinach, and witloof, besides the best possible examples of more common ones. If the judges have time they can explain what they use as criteria when awarding ribbons. In fact all ages may very much enjoy attending a Fair; often there are rodeo events, animal exhibits, plus clothing and food displays besides the fruits and vegetables to be seen.



A miniature one, the Denver County 4-H Fair, will be held on August 4th and 5th at the Horticulture Hall of Denver Botanic Gardens. Some of the scheduled events are: Introduction of the Fair King and Queen (10:30 AM), 4-H In Action Booths (11 AM), Exhibits on display (2-9 PM), all on August 4 and on August 5, the Awards Program (2-4 PM) and Dress Review (7:30 PM). Come and have fun.

An *overall review* for the N.J.H.A. students will be held at 9:30 A.M., August 23rd in Classroom A. This is an opportunity to prepare for the State Contest on September 18th.

Also on August 23rd, Mrs. Kosanke will begin her class on *Techniques of Collecting and Drying Flowers in Silica Gel*. The class will meet at 9:00 A.M. in Classroom B and Mrs. Kosanke will take her students outside to select flowers. Please bring two plastic shoe boxes with lids, scissors, wire cutters, and a wide mouthed gallon plastic container with a tight lid. On Friday, August 27th, the second day of the class, the group will also meet at 9:00 A.M., Classroom B. The cost of this class is \$17.50. Limit 18.

The last field trip of the session to *Mt. Goliath* is scheduled on August 24th. Meet at 8:00 A.M. at 909 York Street, or at 9:00 A.M. at Echo Lake Lodge. Free. Limit 20. No sign-ups before August 9th, please.

A *Herb Garden Walk* will be led by Gloria Falkenberg on August 25th. Meet at 8:00 A.M. in the Herb Garden (near 909 York). Many herbs have historical connotations that date from classical times. Winners in the Pan Hellenic Games in Greece were crowned with parsley and Galen wrote that parsley was "sweet and grateful to the stomach". Virgil recommended in the *Georgics* "All about let there be luxuriant growth of green Cassia and wild Thyme with its spreading perfume and abundance of strongly scented Savory". Limit 20. Free.



Also on that date *Basic Mushroom Identification*, a six-week class, will be offered by George Grimes. It is co-sponsored by the Colorado Mycological Society and the Denver Botanic Gardens from August 25 to September 29 from 7 to 9 P.M. in Horticulture Hall. The fee is \$10.00.

People interested in this subject should also plan to attend the Mushroom Fair, which the Colorado Mycological Society will sponsor on Sunday, August 22nd in the west end of the Museum of Natural History and the Bailey Lounge. Since members of CMS will have taken a foray prior to the Fair, many examples will be on display and members will help identify samples that the public bring in. Colored slides of Colorado mushrooms will be continually shown and mushroom books will be available for purchase as will a cookbook written by Mycological Society members.

Many exhibits will be featured including spore prints, artistic treatment of mushrooms in crafts, and a demonstration by personnel from Denver General Hospital on treatment of mushroom poisoning.

The Mushroom Fair will open at Noon and extend into the afternoon. The cost is \$1.00 for those over 12 years old. Free for those younger.

And More About Mushrooms!

A lovely *Mushroom Book* has been presented to the Helen Fowler Library by Dr. Alexander H. Smith. This illustrated portfolio, a limited printing, includes life sized color illustrations of 15 species. Number 34 of this special printing of 75 is on display in the Rare Book Room.

* * * * *

Please remember due to the popularity of some courses and limited enrollment, it is very possible that a class may be filled early. If this happens, please do not be discouraged since it is likely that the popular courses will be repeated at a later date.

A Rose Judging School for the Rocky Mountain District will be held in Horticulture Hall at Denver Botanic Gardens on August 14 and 15th. Although the school is directed toward those people interested in becoming Accredited Rose Judges, it will be of value to anyone wanting to learn more about roses in depth. Subjects covered will include Rose Anatomy, Identification of Varieties and Practice in Judging. On August 14th registration is at 8:30 and the school begins at 9:00 a.m. August 15 will primarily cover review, practice and the test. The cost is \$5.00 for instruction and \$10.00 for those taking the test for credit. For additional information please call Mrs. Herb Franson, 424-3942.

Members have been inquiring about the activities going on to the north of the Education Building. Twenty two advanced students in the Youth Garden have been busy indeed at that spot. First came intensive soil preparation, then soil analysis, followed by the circular plot design. The sprinkler system has been installed and the exterior landscaping of the Garden will soon follow. The students have been working with the French Intensive Gardening System and also will try some hydroponic experiments. Two College Interns, Anita Hall from Colorado State University and Judy Golden from the University of Northern Colorado have been most helpful in all aspects of design and planting and of course the participating students have really been involved.

Come see for yourself and talk to these enthusiastic gardeners. The garden is open on Tuesday and Thursday from 8:30 to 11:30 a.m. and 5 to 7:30 p.m. and on Saturday from 1 to 4 p.m.

Of course, walk across the street and see the other Children's Garden and drive over to 29th and Jackson where the Barrett Garden is really growing too.



Are you getting surfeited with zucchini? How about adding variety to your menu by fixing that vegetable in a cake?

Take 3 Cups grated Zucchini	3 Cups Flour (may add
3 Cups Sugar	dash of cinnamon
1 Cup Chopped Pecans	or nutmeg)
1½ Cups Oil or	2 t. Baking Powder
1 Cup Crisco	1 t. Soda
4 Eggs beaten	½ t. Salt

Combine squash, sugar, oil and eggs. Beat well. Sift dry ingredients and add to mixture. Add nuts. Grease and flour 13" x 9" baking pan and add mixture. Bake at 350°F. for one hour or until done. (This recipe is courtesy the Children's Garden where lots of zucchini is grown!)

DENVER BOTANIC GARDEN TRIP TO GREAT BRITAIN

By Lucian Long

Those of us who have just returned from Great Britain wish to report that we couldn't have had a better time. We arrived for the opening day of the Chelsea Flower Show where no effort was spared to make this the greatest flower show in the world.

From that moment on there was a succession of events which completely filled the 23 days with exciting adventures. We traveled about 2,000 miles with our own coach and tour guide, and in addition, we were favored with the expert guidance of Mr. T. H. Findley, gardener to the Queen. Through Mr. Findley's intimate knowledge of British flora and his experience of having worked in many of the important gardens of England and Wales we were able to see the best of each in the least time. Each garden contained its own surprise. As we rounded a bend in Sheffield Park Garden we came upon a grove of hardy palm trees from China which were planted in 1911. I found a native wild orchid in one of the meadows. At Bodnant Garden in Wales the famous Laburnum Arch was at its peak glory.

Each park seemed to abound with fuchsias, azaleas, magnolias, and rhododendrons in immense clumps interspersed among fine old oaks, rare maples, majestic junipers and cedars, and sweet chestnuts, many several hundred years old. There were trees and shrubs from all parts of the world including the pink-flowering dogwood from the eastern United States, the California big sequoias, cypresses from S.E. United States, and a Colorado blue spruce. In Kew Gardens we located a clump of Colorado columbine.

At Hampton Court we saw the oldest grape vine in Britain which is still producing grapes. It is from a cutting of the Black Hamburg variety and has attained a girth of seventy-eight inches. It was planted in 1768 presumably by Lancelot Brown, a famous gardener who was destined to transform the crowded, geometric gardens of the day into English park gardens, with their hills, lakes, and trees. We saw many examples of his influence.

Altogether we visited 24 gardens including a few which have only recently been opened to the public because they were too large for the exclusive resources of one family. Also we were privileged to visit Chartwell, the home of Winston Churchill and to see beautiful landscaping and the chair where he sat in meditation by the pool.

Not all our time was spent visiting gardens, but included stops for historic cathedrals, Roman baths, walled cities, castles, and palaces. We drove under the Newport Arch, the only Roman gateway remaining in Britain which spans a main road, although we had to close the coach ventilators in order to clear. To complete the span we saw the prehistoric monuments of Stonehenge and Avebury, dating back to about 1200 B.C. Certainly it was a trip we will remember forever.

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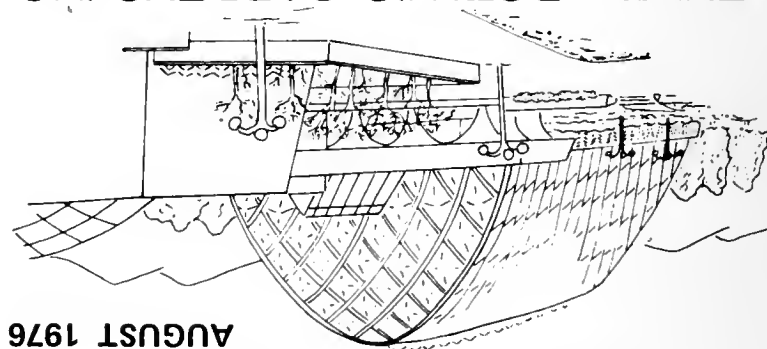
DAHLIA SHOW AUGUST 28 - 29

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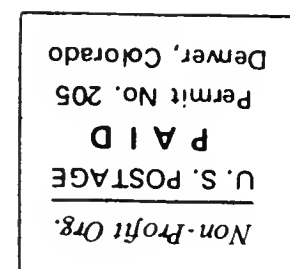
Tuberous begonias of all colors from white to pink, rose, red, apricot, flame orange and salmon graced the Lobby Court area in July and will continue as display plants in August. Be sure to see these spectacular blooms (and other begonias, too!)

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AUGUST 1976



If you are interested in becoming a volunteer, what about serving in the Library? There are at present 32 volunteers at the Helen Fowler Library, Denver Botanic Gardens. The volunteers are involved in numerous and varied duties which include: processing new acquisitions; yearly inventory of book collection; typing subject headings and classification number on Library of Congress cards; classification and cataloging of pamphlets; maintenance of periodicals file; filing LC cards; maintenance of cross references for public card catalog; circulation; bookkeeping; writing to government agencies for publications; keeping up the plant clinic records; maintenance of seed and nursery catalog collection; original cataloging of books for which LC cards are not available; producing stencils listing current book and pamphlet acquisitions; looking up call numbers for monthly accessions list; overdues; reading shelves; preparing books for binding; reading book reviews; preparing catalog cards for duplication; checking pamphlet file subject headings; searching current literature for possible additions to library collection; helping patrons, keeping daily tally, collecting and recording fines, explaining and accepting new memberships.

In the past large endeavors such as reclassifying the collection to the Library of Congress classification scheme, checking the entire periodical collection and the annual book sale have been done by volunteers. During the past five years, the library services have increased by 500 per cent. Services could not be provided to the patrons and staff without the cooperation of the library volunteers.

Sounds like fun? Call Solange Gignac, 297-2547 Ext. 24 for further information on ways you can help!

August Film

A beautiful film about the fantastic flowers of South Africa will be shown on August 14th at 1:30 P.M., Classroom C. The award winning film, "On the Third Day" shows such beauties as proteas and gerberas, many filmed at Kirstenbosch Gardens.



Denver Rose Society's
Annual Rose Show

The Denver Rose Society will hold its annual rose show August 22, 1976 at Denver Botanic Gardens (Horticulture Hall), 1005 York Street. The colorful roses will be on display to the public from 1:00 p.m. to 5:00 p.m. There is free admission and parking.

Judging of the roses will be in the morning, 10:00 a.m. to 12 noon, with over 175 classes of roses including a special division for people wishing to show roses who have never done so before (Novice and Juniors). Members of the Denver Rose Society will be available to help these people enter a rose in the show. There will also be classes for artistic arrangements and table settings using roses. Twenty seven different trophies will be awarded and will be on display at Horticulture Hall.

Those wishing to enter roses should have them available by 9:00 a.m. No rose entry will be accepted after 10:00 a.m.

Anyone having questions may contact Dr. Warren Kirkley, chairman of the rose show, 424-0472.



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GARDENING TIPS FOR SEPTEMBER

Where did the summer go? Seems just yesterday that I wrote in this column about getting your gardens ready for spring but perhaps we'll still have some summer left and hopefully, an Indian summer with an extended growing season.

The weather is always so unpredictable in the fall and as weather records indicate, a killing frost can come early in September or may not occur until as late as November. The average is sometime around mid-October.

If you think this has been an unusually buggy and hot year, you are right but checking back in the records that are kept in this office, I find the types of problems encountered parallel the 1974 season. In that season too, we encountered an early warm-up spring, an unusually hot spell in June and July and rain squalls in August.

Perhaps the greatest difference seen this year was in the amount of foliage-type diseases which are unusual for the semi-arid west. This can be blamed to a great extent on the wind damage that occurred in mid-June when trees were in full leaf. The wind damage which caused a lot of bruising of foliage allowed easy access for fungi and certain bacteria. Fire blight, a bacterium, was again a big problem this season. There is still no satisfactory control for fire blight.

Another difference that was encountered this year was the number of mature trees that failed to leaf out or did leaf out only marginally and then faded away. In most cases, it was blamed on insufficient soil moisture during the winter-time. In any case, it occurred in deeply rooted trees as a result of a nearly complete deficiency of moisture in the subsoil areas. Many of these trees also showed a basal rot development which weakened them and in some cases, even a moderate wind was sufficient to blow them over.

This experience again points up the importance of deep root watering during open, dry winters. Deep watering is also a good idea in the fall, after the leaves begin to develop their fall color. It is best not to do it before then, however, because it might promote some late growth.

Fall Lawn Care

September is a good time to prepare a new lawn or patch up an old one. Lawns had a tough time this season with many diseases as well as drought injury. If you have areas in an old lawn that never seem to fill out well or died as a result of disease, you may wish to overseed with a good bluegrass variety. It is important to buy a good quality seed that is free of weeds. Before seeding the area, loosen the soil or roughen it up so that the seed will lodge properly and then use the thatch that is raked out of the area as a temporary seed cover. This will help reduce the need for frequent watering. You can also patch in some areas using pieces of sod taken from the edge of the lawn, particularly where edging is necessary to stop the lawn from creeping into your flower beds or other gardens.

If you are doing an entire new lawn, whether you seed or sod, it is important to prepare the soil so that it will not compact. If the soil is fairly heavy you will need to add up

to three cubic yards of peat, old barnyard manure or other similar matter to help keep the soil open. About one inch of organic matter on the surface will be equivalent to three cubic yards per 1,000 square feet. The organic matter should be thoroughly tilled into the soil to a depth of at least six inches.

This is a good time to also gain control of weeds in the lawn. Since lawn grasses do most of their side growth (tillering) in the fall, you can do much towards weed control by promoting this growth with fall fertilization. A 20-10-5 analysis fertilizer used at double rate, that is, twice the rate indicated on the bag, will help develop a good, strong turf and will help it to remain strong through the winter months and well into next spring. Be sure when using the fertilizer that it is watered in immediately after application. To avoid streaking in the lawn, run the spreader in two different directions. The rotary-type spreaders will spread the material more evenly and much faster.

Dandelions and other broadleaf weeds that are in the lawn can also be successfully controlled at this time of year using 2, 4-D or similar mixtures of broadleaf weed control chemicals. Controlling the weeds now will reduce the need for future weed control next spring. I prefer to do spot treatment using a "Killer-Kane" because it requires less use of chemicals, puts it where it belongs, and reduces chances of spray drift injury. This method would not be practical, however, if you have a lawn that is covered with weeds. In this case, it is better to use a regular pressure sprayer which has an adjustable nozzle that will produce coarse droplets. If you use a sprayer for weed control, be sure to mark it permanently for weed control only. Most of the broadleaf weed killers cannot be completely washed out of the sprayer and the residue can cause damage to your trees, shrubs and flowers if the same sprayer is used later with insecticides and fungicides.

Fall Planting

To plant a tree or shrub in the fall has always been controversial, particularly, in Colorado. The reason for the controversy is that it is impossible to predict sudden changes in the weather that can cause injury to newly planted trees. If you contemplate planting any trees or shrubs this fall, consider using a mulch over the root zone which will tend to delay freezing of the soil and will help to promote better rooting before cold weather sets in. If this is done, many trees will survive the winter without any problem at all. In most cases, deciduous trees and shrubs will survive better from fall planting than will evergreens. This is because the transpirational surface is lost when the leaves fall but evergreens continue to lose moisture and if we have cold, dry winds, they will lose moisture faster than the roots, damaged through transplanting, can replace.

If you insist on planting evergreens in the fall, in addition to mulching the soil surface and giving them a thorough, deep watering, you can protect from possible wind injury by temporarily wrapping them with burlap or, con-

(Continued inside page)

sider using an antitransparent which is sprayed on the foliage. Antitransparents are chemicals which put a film over the foliage surface and temporarily protects most of the moisture loss through the stomates (breathing pores) in the leaves. Antitransparents, however, must be used with caution because if they are applied too strong they can smother the plant and they should never be used during freezing weather.

Fall Bulbs

Now is a good time to look for and purchase any spring-flowering bulbs that you will need to plant this fall. The earlier you purchase them, the more likely you will be to find a good selection of both size, variety and those in top condition. When selecting your bulbs, find the largest size of that type or variety. Check them carefully and discard those that have mold or mechanical damage.

Where possible, try to purchase your bulbs from garden centers that have them in open bins rather than in pre-packaged containers. This will give you a better chance to inspect them carefully.

The only danger with the open-bin type of marketing is that sometimes the bulbs are mixed. That is, a customer may not put them back in the proper bin. Usually, however, bulbs of your variety will be slightly different in color, shape or size than another. The bulbs can be planted now but if you are too busy, there is nothing wrong with waiting until October. In the meantime, make sure the soil you plan to plant them in is well prepared and well drained.

Dr. J. R. Feucht



NEXT LOBBY COURT DISPLAY

Remember last fall's magnificent display of chrysanthemums in the Lobby Court? They will be back again in September, replacing the unusual begonia display of the late summer. This time there will be about 200 plants in a blaze of all the brilliant fall colors — yellow, gold, orange and red, and later the purple ones.

The chrysanthemums, now being prepared in Botanic Gardens greenhouses, will demonstrate the popular plant and flower forms of bonsai, cascade, spray and standard in ten different flower types: exhibition incurve, recurve, reflex, decorative, feathered or lacinated, spider and quill, anemone, spoon, single and semi-double, pompom and button.

BOTANIC GARDENS GLAD WINS AT GREELEY SHOW

A fine gladiolus, planted and grown in Botanic Gardens by Bob Folsom, and shown at the Northern Colorado Gladiolus Show by Lee Ashley under the name of Denver Botanic Gardens, was the winner of "All America Little Champion," "Section Champion" and "Little Champion Spike—1976" ribbons.

The spike, "Lambkin," a 200 class miniature white, introduced this year by Carl Fisher of St. Charles, Minn. was grown here in the All-America display garden. The Northern Colorado show was held in Greeley on August 7.

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A most welcome addition to the Helen Fowler Library is the copying machine that was installed in August. The cost per copy is 10 cents.

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SEPTEMBER CLASSES & TRIPS

The educational program for September offers a variety of experiences for all ages. While a few field trips will be available, several classes ranging from *Chrysanthemum Culture* to *Food in History* are offered.

Beginning August 25, Mr. George Grimes will be teaching his *Basic Mushroom Identification* course. Mushroom identification can be a fascinating and fulfilling hobby. The class will consist of illustrated lectures and will include discussions of the life cycle, anatomy and physiology of mushrooms. It will be held on Wednesdays, August 25 through September 29 from 7:00 to 9:00 P.M. in Horticulture Hall. While there is no limit to class size, there will be a \$10.00 fee. If you do have an interest in the mushrooms, be sure to see the *Mushroom Book* by John Cage, Lois Long and Dr. Alexander Smith in the Waring Rare Book Room. It is an excellent appreciation of the color, diversity and folklore of the mushrooms.

Dr. E. H. Brunquist will lead a *Plant Identification Field Trip* on Wednesday, September 15, for those who enjoy identifying the flora of the nearby mountains. The group will meet at 9:00 a.m. in the parking lot of Botanic Gardens House. Any adult may come along; there is no limit on the number. Bring a sack lunch. Gasoline expenses will be shared with the driver. This is the last of these trips for the year.

Two other field trips offered this month are both on Saturday, September 18, at 9:00 a.m. A field trip to *Adams County Nature Preserve* will be under the guidance of Jim Ratzloff. The group will first meet in Classroom C to view slides on the area and its flora in all seasons before driving out to the site. Jim has done an in-depth study on the area and will be able to provide abundant information on the fifteen acres along the Platte. Bring your lunch. Transportation by car pool. Limit 20.

JIM RATZLOFF TO B.L.M.

Jim Ratzloff, who will lead the September 18th field trip to Adams County Nature Preserve, has been working this summer for Botanic Gardens, collecting specimens of cultivated plants, both woody and herbaceous, for the Herbarium. Jim is leaving us now and will be working through Jefferson County C.E.T.A., making a list of plants in the Montrose area for the U.S. Bureau of Land Management. He will be particularly concerned with identifying endangered species of plants and his results are to be used in environmental impact statements. Jim is a graduate of Metropolitan State College with a bachelor's degree in biology.

DENVER BOTANIC GARDENS
CALENDAR OF EVENTS
SEPTEMBER, 1976

SEPTEMBER

1)*	7:30 a.m.	Education Building - Horticulture Hall	"Keep Colorado Beautiful" (Registration)
1)	7:00 p.m.	Education Building - Horticulture Hall	Basic Mushroom Identification - Instructor: Mr. George Grimes
2)*	8:00 a.m.	Education Building - Horticulture Hall	"Keep Colorado Beautiful"
2)	7:00 p.m.	Education Building - Lecture Room "C"	Colorado Open Space Council
2)*	7:45 p.m.	Education Building - Horticulture Hall	Denver Orchid Society
3)	11:00 a.m.	Botanic Gardens House - Main-Dining-Kitchen	Civic Garden Club
4)	9:30 a.m.	Botanic Gardens House - Main Room	Gloxinia Gesneriad Growers
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7)*	10:00 a.m.	Education Building - Herbarium	Herbarium Committee Meeting
7)*	1:00 p.m.	Botanic Gardens House - Dining Room	Editorial Committee Meeting
7)	7:30 p.m.	Education Building - Lecture Room "B"	Denver Bonsai Club
8)*	9:30 a.m.	Botanic Gardens House - Main Room	D.B.G. Guild Meeting
8)	10:00 a.m.	Education Building - Lecture Room "A"	"The Urban Vegetable Garden" Instructor: Mr. Larry Latta
8)	7:00 p.m.	Education Building - Horticulture Hall	Basic Mushroom Identification Instructor: Mr. George Grimes
8)*	7:30 p.m.	Botanic Gardens House - Dining Room	Landscape Industry Council
9)*	9:00 a.m.	Education Building - Lecture Room "B"	"Chrysanthemum Culture" Instructor: Mrs. Nancy Collins
9)	7:30 p.m.	Botanic Gardens House - Main-Dining-Kitchen	Denver Rose Society
10)	7:30 p.m.	Botanic Gardens House - Main-Dining-Kitchen	Denver Dahlia Society
11)*	9:00 a.m.	Education Building - Horticulture Hall	Children's Garden Graduation
11)	1:30 p.m.	Education Building - Lecture Room "C"	Film: "Carnations a Mile High"
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13)*	9:30 a.m.	Tour of Outside Gardens - Instructor: Mr. Glenn Park	
13)	7:30 p.m.	Botanic Gardens House - Main Room	Denver Sierra Club (Wildlife Committee)
13)	7:30 p.m.	Education Building - Horticulture Hall	Colorado Mycological Society Meeting
14)*	9:30 a.m.	Education Building - Lecture Room "A"	Sunburn & Blisters Garden Club - Meeting and Tour
14)*	4:00 p.m.	Botanic Gardens House - Dining Room	Executive Committee Meeting
14)*	7:30 p.m.	Education Building - Horticulture Hall	E.C.C. Nature Study Unit
14)	7:30 p.m.	Education Building - Lecture Room "B"	Sierra Club
15)*	8:30 a.m.	Education Building - Horticulture Hall	Keep Colorado Beautiful - Meeting and Buffet
15)	9:00 a.m.	Botanic Gardens House - Parking Lot	PLANT LIFE FIELD TRIP — Dr. E. H. Brunquist
15)	10:00 a.m.	Education Building - Lecture Room "A"	"The Urban Vegetable Garden" Instructor: Mr. Larry Latta
15)*	1:00 p.m.	Education Building - Lecture Room "C"	Tropical Plants of the Conservatory Instructor: Mrs. P. Hayward
15)	7:00 p.m.	Education Building - Horticulture Hall	Basic Mushroom Identification Instructor: Mr. George Grimes
15)	7:30 p.m.	Education Building - Lecture Room "B"	Sierra Club
16)	7:30 p.m.	Education Building - Lecture Room "A"	Colorado Open Space Council
16)	7:30 p.m.	Education Building - Lecture Room "C"	Organic Garden Club
17)*	7:30 p.m.	Education Building - Lecture Room "B"	Colorado Bonsai Club
17)	7:30 p.m.	Education Building - Herbarium	Denver Botany Club
18)	All day	Education Building - Horticulture Hall	National Jr. Horticulture Society
18)*	9:00 a.m.	Education Building - Lecture Room "B"	Art Workshop for Children Instructor: Ms. Diane Lewis
18)	9:00 a.m.	Education Building - Lecture Room "C"	Slides: By Mr. Jim Ratzloff and Field Trip to Adams County Nature Preserve
18)	9:00 a.m.	Meet at 909 York Street	Field Trip to Study Dye Plants Instructor: Ms. Carol Hoffman

CALENDAR OF EVENTS FOR SEPTEMBER (Continued)

18)	9:00 a.m.	Botanic Gardens House - Main Room	Hi-Country Judges Workshop – Mrs. Doreen Fussell
18)	1:30 p.m.	Education Building - Lecture Room “B”	Art Workshop for Children Instructor: Ms. Diane Lewis
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20)*	9:30 a.m.	Education Building - Lecture Room “B”	Central District of President’s Council
20)	7:30 p.m.	Education Building - Lecture Room “B”	Rocky Mountain Bromeliad Society
21)*	10:00 a.m.	Education Building - Lecture Room “B”	Basic Bonsai – Instructor: Mrs. Mary Neil
21)	7:30 p.m.	Education Building - Horticulture Hall	Sierra Club
21)	7:30 p.m.	Education Building - Lecture Room “B”	Denver Bonsai Club
21)	7:30 p.m.	Botanic Gardens House - Main-Dining-Kitchen	Rocky Mountain African Violet Council
22)*	9:15 a.m.	Education Building - Horticulture Hall	Jr. League – Environmental Program
22)	10:00 a.m.	Education Building - Lecture Room “A”	“The Urban Vegetable Garden” Instructor: Mr. Larry Latta
22)*	1:30 p.m.	Education Building - Lecture Room “C”	Tropical Plants of the Conservatory Instructor: Mrs. P. Hayward
22)	7:00 p.m.	Education Building - Horticulture Hall	Basic Mushroom Identification Instructor: Mr. George Grimes
23)	7:30 p.m.	Education Building - Lecture Room “B”	Capitol Hill United Neighborhood
23)*	7:30 p.m.	Botanic Gardens House - Main-Dining-Kitchen	Denver Men’s Garden Club
24)	9:00 a.m.	Education Building - Horticulture Hall	Potter’s Guild Juried Show OPEN TO PUBLIC: 9:00 a.m. - 5:00 p.m.
25)	9:00 a.m.	Education Building - Horticulture Hall	Potter’s Guild Juried Show OPEN TO PUBLIC: 9:00 a.m. - 5:00 p.m.
26)	9:00 a.m.	Education Building - Horticulture Hall	Potter’s Guild Juried Show OPEN TO PUBLIC: 9:00 a.m. - 5:00 p.m.
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27)	9:30 a.m.	Botanic Gardens House - Main Room	Ultra Violet Club
27)	7:30 p.m.	Education Building - Lecture Room “A”	Nature Conservancy
27)	7:30 p.m.	Education Building - Lecture Room “B”	Sierra Club (Wilderness Workshop)
28)*	10:00 a.m.	Education Building - Lecture Room “B”	Basic Bonsai - Instructor: Mrs. Mary Neil
28)*	4:00 p.m.	Botanic Gardens House - Conference Room	Board of Trustees Meeting
28)	7:30 p.m.	Education Building - Lecture Room “C”	Gladiolus Society Meeting
29)	All Day	Gift Shop Closed for Inventory	-----
29)	10:00 a.m.	Education Building - Lecture Room “A”	“The Urban Vegetable Garden” Instructor: Mr. Larry Latta
29)*	1:30 p.m.	Education Building - Lecture Room “C”	Tropical Plants of the Conservatory Instructor: Mrs. P. Hayward
29)	7:00 p.m.	Education Building - Horticulture Hall	Basic Mushroom Identification Instructor: Mr. George Grimes
30)	6:00 p.m.	Education Building - Lecture Room “A”	“Food in History” - Instructor: Mrs. Eileen Price
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OCTOBER			
1)		Education Building - Horticulture Hall	Denver Orchid Society Show - OPEN TO PUBLIC
1)	11:00 a.m.	Botanic Gardens House - Main-Dining-Kitchen	Civic Garden Club Meeting
2)	9:00 a.m.	Library	Use of the Library
2)		Education Building - Horticulture Hall	Denver Orchid Society Show - OPEN TO PUBLIC
2)	9:30 a.m.	Botanic Gardens House - Main Room	Gloxinia Gesneriad Growers
3)		Education Building - Horticulture Hall	Denver Orchid Society Show - OPEN TO PUBLIC

*Members or Enrollees Only

For those interested in natural dyes, the second field trip of the day will be centered around the *Identification and Color Properties of Dye Plants*. The group will meet with Carol Hoffman at Botanic Gardens House at 9:00 a.m. There will be \$1.50 fee for the trip.

Different areas of plant cultivation can be explored by attending any of several classes offered this month. Although many people believe that the coming of cold weather brings an end to work in the outside garden, Larry Latta's class, *The Urban Vegetable Garden*, will show you what should be done now to prepare for your spring garden. The course will explore the whys, hows and whens of city plot gardening. The class will meet on Wednesdays, September 8 to October 13 at 10:00 a.m. to Noon in Classroom A. There will be a \$10.00 fee.

If you've had it with toiling in the soil, try *Hydroponics*. Norton Novitt is a firm believer in the bubbling water method of growing plants. He is teaching the class at his home so that you may see the equipment, methods and results first hand. The class will be held on Saturday, September 11 at 9:00 a.m. Call 297-2547 for directions to Mr. Novitt's home. There is a \$1.00 fee for the class.

For those of you who like a challenge, classes in *bonsai* and *chrysanthemum culture* are on the agenda for this month. On Thursday, September 9, Mrs. Nancy Collins will demonstrate the proper way to shape *Chrysanthemums* for desired effects. Especially successful varieties for this area will be suggested. It will be held 9 - 11:00 a.m. in the greenhouse. Limit 12.



Basic Bonsai, under the direction of Mrs. Mary Neil, will teach the fundamental techniques of wiring, pruning, watering and potting. A \$12.00 fee is required and will cover the soil and wire. Additional materials will be at the student's expense. The class will meet on Tuesdays, September 21 - October 12 in Classroom B from 10 - 12:00 Noon. Limit 15.

In a different vein, Eileen Price will explore the rise and fall of civilizations along with the spread of plants. Every Thursday from September 30 through October 28, *Food in History* will meet from 6:00 to 7:30 p.m. in Classroom A. The cost of this class is \$10.00.

If anyone is interested in learning more about the Botanic Gardens, this is your month. On Monday, September 13, Mr. Glenn Park, Assistant Director of the Denver Botanic Gardens, will take a group on a leisurely walk through the *Outside Gardens*. He will point out the many improvements made this summer and discuss plant material and landscape design. Meet at 909 York Street at 9:30 a.m. Limit 20.

A GUIDE TO HAPPINESS

Learn the fascinating story and histories of the Passion-flower, Norfolk Pine, Bullhorn Acacia, and the many other tropical plants. Be amazed at the many uses of the Palm Trees.

Every week see the beauty of the blooming plants, trees, and shrubs in the conservatory. Get a feel of Hawaii right here in Colorado.

Watch a youngster's eyes light up at his first sight of a "real" banana growing on a banana plant.

Receive a letter of gratitude like this one:

"Thank you for being our guide. I liked the jungle. I liked the way the bananas grow. The flower that looked like a bottle brush. I liked the African Tulip. I liked the smell of the lime leaf. Thank you.

Yours Truly,
Cindy Stout"

Enjoy the tropical teas and other guide activities.

Receive the physical satisfaction derived from sharing your knowledge of the many tropical plants with others.

Enroll in the Tropical Plants of the Conservatory course beginning Wednesday, September 15.

Join the Denver Botanic Gardens Associates.

BECOME A DENVER BOTANIC GARDENS CONSERVATORY GUIDE!

Interesting features of the plants in the Conservatory is the topic of *Tropical Plants of the Conservatory*, which is offered and taught by The Associates. Although the class is designed to prepare interested people to be tour guides, the class is open to anyone. The \$25.00 fee will be refunded to those students who guide for a total of forty hours. Mrs. Peg Hayward will be the instructor. The class will meet Wednesdays, September 15 - November 3 from 1 - 3:00 p.m. in Classroom C and the Conservatory. Limit 20.

Ms. Diane Lewis, Director of the Canaan Center for Creativity in Denver, is offering an *Art Workshop for Children* on Saturday, September 18. Youngsters who like to paint may express their creativity with the color and shapes found in the plant life at the Gardens. Any child in grades 1 - 3 is welcome. Materials will be provided. Grades 1 - 3 will meet from 9 - 12:00 Noon. This session will meet in Classroom B. There will be a \$1.50 fee. Limit 10 students.

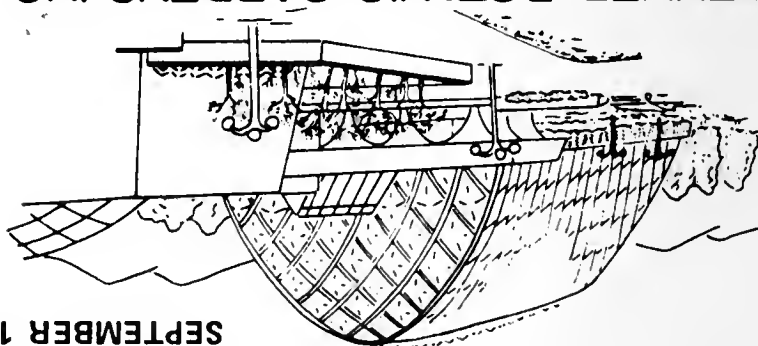
The *Tree Walk in Washington Park*, conducted by Dr. Gambill, was so popular last year that it is necessary to limit the attendance this year to 25 persons. It will take place on Saturday, October 2. The group is to gather at the South Marion Street Parkway entrance to the north end of Washington Park at 9:00 a.m. Call in to make your reservation.

LIFE MEMBERSHIP

A Life Membership in Denver Botanic Gardens has been established by Mr. E. H. Honnen on behalf of his wife, Marnie Honnen.

Mrs. Honnen, a beloved member and worker, is an honorary life trustee of the Gardens. It was she who underwrote the original Garden Fair and Show which became the Denver Garden and Home Show, and she was instrumental in starting the annual Plant Sale.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



SEPTEMBER 1976

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CHILDREN'S GARDEN GRADUATION

The York Street Children's Garden Graduation will be held on September 11 at 1:30 P.M. in Horticulture Hall. Certificates will be awarded to all children who have completed the program successfully. There are 42 advanced gardeners and 55 beginner gardeners. The children will present original skits and poems about their gardens and what they mean to them. Refreshments will be served after the ceremony at the youth garden located North of the education building. All are invited to tour the new youth garden during the open house which will be held at this time.



FREE FILM ON CARNATIONS

Colorado carnations are famous all over the country. To learn more about the big business of growing them here you should see the free film, "Carnations A Mile Hi," which will be shown at Botanic Gardens, Classroom C, on September 11th at 1:30 P.M. The film was prepared for Colorado Flower Growers.

SHOW OF POTS FOR HORTICULTURE

Colorado Potter's Guild's first juried show will display only those pots designed for horticultural uses. The show will be held in Horticulture Hall on September 24, 25 and 26, and will be open from 9 a.m. to 5 p.m. each day.

Clay media pots, including terra cotta, glazed and unglazed, stoneware and porcelain, in a variety of shapes and forms, will be seen. There will be hanging pots, large and small pots for plants, pots for flower arrangements and containers for dried arrangements.

Gene Lang, well known in this region, will jury the show, insuring the highest quality of exhibits.

All pots on display will be for sale, unless indicated otherwise. A donation of 50% will be given to Botanic Gardens at the end of the show.

Refreshments will be served during show hours.

Memorial gifts have been received in honor of Mrs. Margaret Mead and Mrs. Helen S. Beise; also a northern red oak tree to be planted in the Hammer Garden in memory of Eleanor Van Schaack Knowles.

The botanical stamp collection at the Library is being brought up to date. Since the gift of the Kathryn Kalmbach stamp collection in 1972, many stamps have been donated and allowed to accumulate. Clifford Schaffer, a Library volunteer and amateur philatelist, has undertaken this project. The collection of botanical stamps — American, foreign, cancelled or not cancelled — is a continuing Library activity. Should anyone wish to donate time and/or stamps to the Library, please call Solange Gignac at 297-2547, Ext. 24.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication. Editor — Margaret Sikes, 297-2547, Ext. 23.



Green Thumb Newsletter

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DENVER
BOTANIC
GARDENS, INC.

No. 76-10

OCTOBER 1976

297-2547

GARDENING TIPS FOR OCTOBER

PRESERVE GARDEN FLOWERS NOW

With fall fast approaching, it will not be too long before many of the colorful flowers in your garden will be destroyed by frost. You can continue to enjoy many of your garden flowers by preserving them, as well as having fun preparing them for dry arrangements.

One method of preserving garden flowers is drying them by the borax method; using the borax as a medium to support the plant and to help draw the water out of it. Some prefer to use silica gel by itself or in combination with borax. The equipment needed for drying flowers is about twenty pounds of dry, sifted borax, cardboard cartons such as milk cartons, or cheese boxes, or any other shallow containers. The types of flowers that will dry the best include zinnias, marigolds, dahlias and roses. The latter will dry best if picked when the bud is only partially expanded rather than fully opened. They tend to shrivel if picked when fully mature. It is important to pick the flowers on a day when the foliage and flowers are dry; picking only those flowers that have just come into bloom and not fully opened. Most flowers will continue to open somewhat during the drying process. Normally, the foliage is removed from the stems because foliage is not easy to preserve in a way that it would have a good appearance.

To preserve flowers in borax, place about ¼" in the bottom of the container, standing the flowers with the heads upside down in the borax and gently working the powder in the petals, making sure that you keep the petals smooth. Keep working the powder around the flower heads until they are completely covered but only enough to cover the heads, not the stem. The containers are then placed in a warm room away from direct sunlight. It is usually best not to try to store them in the basement because there is a tendency for the basement to have high humidity and this condition will slow down the drying process and cause some of the flowers to become moldy. Normally, it takes two to three weeks for flowers to completely dry. When dried, the flowers can be carefully removed from the borax and cleaned with a soft dusting brush.

It is usually best to dry more flowers than you anticipate needing because some of them will be damaged through the drying and cleaning process.

Since most of the dried flower heads will be stemless, or have only short stems, in order to use them in an arrangement, you will need to make artificial stems with wire covered with florist's tape. Be sure to pick wire that will be thick enough and strong enough to support the weight of the flower heads.

Some garden flowers such as cockscomb (*Celosia*), straw flowers, most ornamental grasses, and golden rod can be dried without the use of borax by simply placing them in a dark, dry, warm room. Darkness is essential during the



Love Those Volunteers !

Casual visitors may not know it but many of the people they chat with when they tour the Gardens are volunteers. The Gardens have a regular staff of 35, a small group for such a big responsibility, and that is why the over 300 volunteers make such a difference. They serve in diverse areas like Gift Shop, Guides, Hostess/Information Desk, Library and Plant Sale besides chairing many standing committees including Children's Garden, Editorial, Herbarium, and Library among others.

Once a year the whole group gets together at the Annual Meeting of The Associates, scheduled this year for October 18 in Horticulture Hall. The business meeting will begin at 10:30 A.M. followed by lunch at 12:15. Mr. Charles M. Drage, the guest speaker, will talk on Front Range Gardening. He will give timely gardening hints for our area and will allow ample time for questions. Mr. Drage, one of the early contributors to *The Green Thumb* magazine is eminently qualified to discuss such a wide topic for he served as Jefferson County Extension Agent and more recently as the state-wide Extension Horticulturist for Colorado State University. Since retiring from C.S.U. he now writes as the Regional Editor reporting on the mountain areas for *Flower and Garden* magazine.

Denver Orchid Society Annual Fall Show

- Date: October 2, 9 AM to 4:45 PM (Saturday)
October 3, 9AM to 3 PM (Sunday)
- Place: Horticulture Hall
The Denver Botanic Garden
1005 York Street, Denver
- Purpose: To educate the general public about orchids and their culture. To show accomplishments of Denver orchid growers.
- Special: A series of lectures and classes on orchids and orchid culture Saturday, October 2, 9-12 at the Botanic Garden. Free and open to the public.

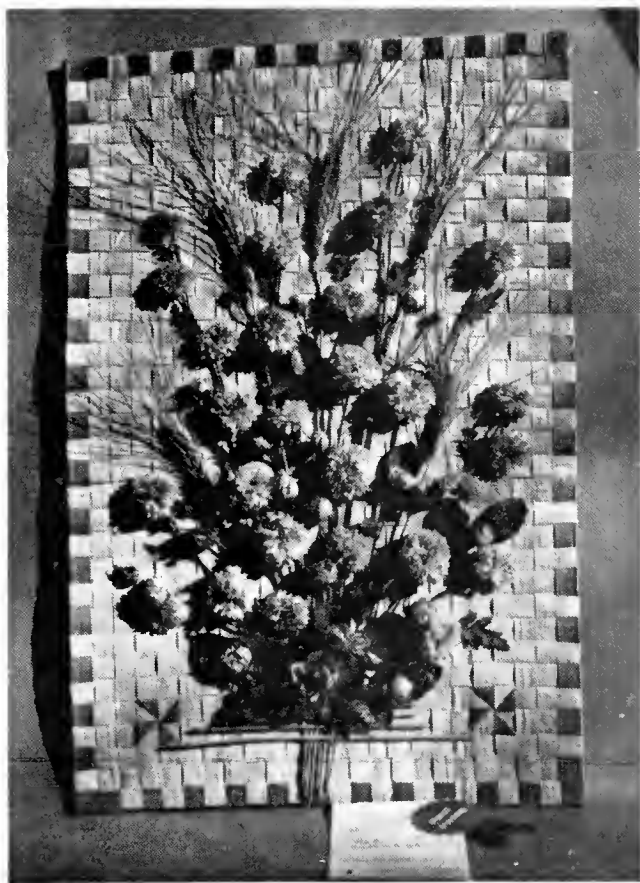
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FOR LIST OF ORCHID BOOKS SEE BACK PAGE.

drying process because sunlight will cause the colors to fade. On such plants, if you are wanting straight stems, they should be hung upside down, suspended from wires or strings. For natural curves in the plants to use later on in arrangements, dry them standing upright and the weight of the flower head will cause the stem to bend in a natural curve.

You need not be limited to garden flowers, even many weeds can be used successfully for dry arrangements. The seed heads of sorrel or dock, lambsquarter, amaranthus or pig weed, and thistle and many other weeds make attractive additions to a dry arrangement, particularly when combined with garden flowers. Road sides and ditch banks are full of all kinds of weeds that can add interesting decorations to your winter bouquet.

Those wishing to preserve fall foliage such as the golden colors in aspen will have better results by taking the branches, mashing the stem bases with a hammer and soaking them for several days in a mixture of one-third glycerin and two-thirds water. After the foliage has taken up the water-glycerin mixture, allow the plants to dry slowly in total darkness. This will keep the colors from fading and the glycerin keeps the foliage supple. Best results will be obtained when collected from trees that have just changed colors. If they are collected too late the leaves may drop off in the drying process.



If you have grown gourds for decoration, they can be enjoyed for many years if properly cured and cared for. It is best to leave the gourds on the vine until they are fully colored and mature; normally until they have been exposed to a light frost. Cut off the mature fruit with the stem still attached, avoiding mechanical bruising or scratching as this will show up as an ugly scar after they have been cured.

After harvesting the gourds, wash them in soapy water and rinse with clean water to which you have added a small amount of household disinfectant (do not use bleach). This will help control surface organisms that often cling to the shell, causing discoloration and decay. Next, spread the gourds out on several layers of newspaper in a warm, dry place to let surface moisture evaporate. This helps harden the skin and set the color. During the curing process, rotate the gourds at least once a day. Curing usually takes about one week.

To finish the curing process, place the gourds in a warm but dark room for three or four more weeks and when the gourds seem to be thoroughly dried, they may be coated with wax, shellac or varnish. If wax is used, use a water-base type wax such as that used on automobiles but one that does not contain the cleaners. After waxing, they may be polished with a soft cloth and displayed in any manner you wish.

In order to enjoy your garden the entire winter, start searching now for things that can be preserved for future decoration.

Tips for Planting Bulbs

Last month we talked about how to buy bulbs and if you have them purchased, now is a good time to put them in the ground but good soil preparation is absolutely necessary to ensure quality bloom.

The most important thing as far as bulbs are concerned is proper aeration and drainage. Condition your soil as deep as possible and where clay soils are involved, add coarse sand and organic matter; thoroughly mixing it with your soil. To do this properly requires very deep cultivation if you are planning to use tulips, narcissus and other large bulbs. Assuming that your soil is reasonably well-drained and aerated, plant bulbs two inches deeper than recommended by the charts usually available where you purchased your bulbs. This will help to prolong the number of years that the bulbs will give showy flowers because the deeper they are planted, the less likely they are to self-propagate, that is, splitting and producing bulblets; thus, avoiding overcrowding for a longer period of time.

Planting them deeper also helps to prevent early emergence of the bulbs in the spring which often results in disappointments because of a late freeze which will damage or kill the new shoots.

If you are planting bulbs in masses, the easiest way is to dig all the soil out to the approximate depth for the particular type bulb. Stir in a little bone meal or super phosphate, set the bulbs to the proper depth and backfill with your soil. This is usually a very strenuous job but it can be very worthwhile in producing a mass of color the following spring.

Another method of bulb planting is to use a special bulb spade available in some garden supply and hardware stores. Such spades will allow planting to about an eight-inch depth which is generally acceptable for the larger bulbs. A planting chart is available upon request by calling 355-8306.

Safe Storage of Pesticides

Now that the growing season is nearing an end, it is a good idea to take an inventory of all your garden pesticides and put them in safe storage. Many of the liquid pesticides must be stored where they will not freeze during the winter but they should never be stored in the home anywhere near the kitchen or the heating plant. Most important, if you have young children, store all pesticides where they cannot get to them. The best way is under lock and key but simply putting them on a high shelf is not appropriate.

If you have empty or near empty containers that had pesticides in them, do not dump the unused portions down the sink or in the toilet. Rather, dispose of all pesticide containers through your normal trash collection. Any glass containers should be first wrapped in several layers of newspapers to prevent accidental breakage of these containers before trash collection.

The simplest way to get rid of unused pesticides is to use them according to the label for pest control.

Dr. J. R. Feucht

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

OCTOBER, 1976

OCTOBER

1)*	11:00 a.m.	Botanic Gardens House — Main-Dining-Kitchen	Civic Garden Club
2)	9:00 a.m.	Education Building — Horticulture Hall	Denver Orchid Society Show OPEN TO PUBLIC: 9:00 a.m.—4:45 p.m.
2)	9:30 a.m.	Botanic Gardens House — Main Room	Gloxinia Gesneriad Growers
3)	9:00 a.m.	Education Building — Horticulture Hall	Denver Orchid Society Show OPEN TO PUBLIC: 9:00 a.m.—3:00 p.m.
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5)*	10:00 a.m.	Education Building — Lecture Room "B"	Basic Bonsai — Instructor: Mrs. Mary Neil
5)*	10:00 a.m.	Education Building — Herbarium	Herbarium Committee Meeting
5)*	1:00 p.m.	Botanic Gardens House — Dining Room	Editorial Committee Meeting
5)	7:30 p.m.	Education Building — Horticulture Hall	East Denver Central Civic Association
6)*	10:00 a.m.	Education Building — Lecture Room "A"	"The Urban Vegetable Garden" Instructor: Mr. Larry Latta
6)*	1:30 p.m.	Education Building — Lecture Room "C"	Tropical Plants of the Conservatory - Mrs. P. Hayward
6)*	4:00 p.m.	Botanic Gardens House — Dining Room	Chatfield Committee Meeting
7)*	1:00 p.m.	Botanic Gardens House — Dining Room	Associates Board Meeting
7)*	6:00 p.m.	Education Building — Lecture Room "A"	"Food in History" — Instructor: Mrs. Eileen Price
7)	7:00 p.m.	Education Building — Lecture Room "C"	Colorado Open Space Council
7)*	7:45 p.m.	Education Building — Horticulture Hall	Denver Orchid Society Meeting
8)	7:30 p.m.	Botanic Gardens House — Main-Dining-Kitchen	Denver Dahlia Society Meeting
9)	9:30 a.m.	Education Building — Lecture Room "A"	"Fruit Trees for the Area" Instructor: Mr. Herb Gundell
9)	1:30 p.m.	Education Building — Lecture Room "C"	Film: "Wonders of the Wilderness"
9)	6:00 p.m.	Education Building — Horticulture Hall	Colorado Native Plant Society Founders Meeting — 6:00 p.m. Membership Enlistment 7:00 p.m. Program
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11)	7:30 p.m.	Education Building — Horticulture Hall	Colorado Mycological Society
11)	7:30 p.m.	Education Building — Lecture Room "A"	Denver Sierra Club (Wildlife Committee)
12)*	10:00 a.m.	Education Building — Lecture Room "B"	Basic Bonsai — Instructor: Mrs. Mary Neil
12)*	4:00 p.m.	Botanic Gardens House — Dining Room	Executive Committee Meeting
12)*	7:30 p.m.	Education Building — Horticulture Hall	E.C.C. Nature Study Unit
13)*	9:15 a.m.	Botanic Gardens House — Main Room	D.B.G. Guild Meeting
13)*	10:00 a.m.	Education Building — Lecture Room "A"	"The Urban Vegetable Garden" Instructor: Mr. Larry Latta
13)*	1:30 p.m.	Education Building — Lecture Room "C"	Tropical Plants of the Conservatory - Mrs. P. Hayward
13)	7:30 p.m.	Education Building — Lecture Room "A"	Landscape Industry Council
13)	7:30 p.m.	Education Building — Lecture Room "B"	Denver Commission on Community Relations
14)	6:00 p.m.	Education Building — Lecture Room "A"	"Food in History" — Instructor: Mrs. Eileen Price
14)	7:30 p.m.	Botanic Gardens House — Main-Dining-Kitchen	Denver Rose Society
15)*	7:30 p.m.	Education Building — Lecture Room "B"	Colorado Bonsai Club
15)	7:30 p.m.	Education Building — Lecture Room "C"	Denver Botany Club
16)	10:00 a.m.	Education Building — Horticulture Hall	"Greening of Your Thumb" — Mr. Herb Gundell
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CALENDAR OF EVENTS FOR OCTOBER (Continued)

18)*	10:00 a.m.	Education Building – Horticulture Hall	Associates Annual Meeting & Luncheon Speaker: Charles M. Drage
18)	7:30 p.m.	Education Building – Lecture Room “A”	Rocky Mountain Bromeliad Society
18)	7:30 p.m.	Education Building – Lecture Room “B”	Sierra Club (Wilderness Workshop)
19)*	10:00 a.m.	Education Building – Lecture Room “B”	Intermediate and Advanced Bonsai Instructor: Mrs. Mary Neil
19)	7:30 p.m.	Education Building – Lecture Room “B”	Denver Bonsai Club
19)	7:30 p.m.	Education Building – Horticulture Hall	Sierra Club (General Meeting)
20)*	10:00 a.m.	Education Building – Lecture Room “B”	“Unusual Container Plants” Instructor: Mr. Andrew Pierce
20)*	1:30 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory - Mrs. P. Hayward
21)	6:00 p.m.	Education Building – Lecture Room “A”	“Food in History” – Instructor: Mrs. Eileen Price
21)*	7:00 p.m.	Education Building – Horticulture Hall	Mayor’s Advisory Council
21)	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Open Space Council
21)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Garden Club
22)*	9:45 a.m.	Education Building – Horticulture Hall	Ikebana International (Workshop)
23)	10:00 a.m.	Education Building – Horticulture Hall	“Greening of Your Thumb” – Mr. Herb Gundell
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25)	9:30 a.m.	Botanic Gardens House – Main Room	Ultra-Violet Club Meeting
26)*	10:00 a.m.	Education Building – Lecture Room “B”	Intermediate and Advanced Bonsai Instructor: Mrs. Mary Neil
26)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society Meeting
27)*	10:00 a.m.	Education Building – Lecture Room “B”	“Unusual Container Plants” Instructor: Mr. Andrew Pierce
27)*	1:30 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory - Mrs. P. Hayward
28)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Meeting
28)*	6:00 p.m.	Education Building – Lecture Room “A”	“Food in History” – Instructor: Mrs. Eileen Price
28)*	7:30 p.m.	Botanic Gardens House – Main-Dining-Kitchen	Denver Men’s Garden Club Meeting
29)*	9:45 a.m.	Education Building – Horticulture Hall	Ikebana International (Workshop)
30)*	8:00 a.m.	Education Building – Lecture Room “B”	Class for Denver Public School Teachers
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NOVEMBER

2)*	10:00 a.m.	Education Building – Lecture Room “B”	Intermediate and Advanced Bonsai Instructor: Mrs. Mary Neil
2)*	10:00 a.m.	Education Building – Herbarium	Herbarium Committee Meeting
2)*	1:00 p.m.	Botanic Gardens – Dining Room	Editorial Committee Meeting
3)*	10:00 a.m.	Education Building – Lecture Room “B”	“Unusual Container Plants” Instructor: Mr. Andrew Pierce
3)*	1:30 p.m.	Education Building – Lecture Room “C”	Tropical Plants of the Conservatory - Mrs. P. Hayward
4)	7:00 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council
4)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society Meeting
5)	11:00 a.m.	Botanic Gardens House – Main-Dining-Kitchen	Civic Garden Club
6)	8:30 a.m.	Education Building – Lecture Room “B”	Class for Denver Public School Teachers
6)	9:30 a.m.	Botanic Gardens House – Main Room	Gloxinia Gesneriad Growers

*Members or Enrollees Only

OCTOBER CLASSES

Solange Gignac will conduct an orientation to the Helen Fowler Library on October 2 at 9:00 a.m. with *Use of the Library*. Free and all welcome.

On the same day Dr. Gambill will lead a *Tree Walk in Washington Park*. Meet at the So. Marion Street Parkway entrance at the north end of Washington Park at 9 a.m. Only 25 people can be accommodated, so get your name in now!

The Denver County Agent, Herb Gundell, will talk about *Fruit Trees for our Area* on Saturday, October 9 at 9:30 a.m. in Classroom A. He will suggest varieties that have proved successful in the Denver area and mention other points to bear in mind when ordering or planting trees. Free.

Students who have completed *Basic Bonsai* with Mrs. Neil may continue their initiation to this oriental art form by signing up for *Intermediate and Advanced Bonsai*. The class is from October 19 to November 9 from 10 to noon, Classroom B. The cost of \$12.00 includes soil and wire; other materials will be at the student's expense. Advanced students will be responsible for bringing their own material. Limit 15.

Finally, the Superintendent of the Conservatory, Andrew Pierce, will teach an advanced house plant class entitled *Unusual Container Plants*. This will be your opportunity to learn about some more uncommon tropical and subtropical plants. The fee is \$7.50 and as of this writing, there are 10 students in the class. Don't delay in signing up for only 10 more can be accepted.

LOBBY COURT

While the "pestilence stricken multitudes" are piling up on your lawn, take a break from leaf raking and come admire the chrysanthemums in the Lobby Court.

A donation in memory of John Scott has been received for this Fund. Thank you very much.

Care to Share:

Unusual seeds, pods, dried blossoms and ornamental grasses are needed by Around the Seasons for the Annual Pre-Christmas Sale. Money plant is extremely popular, as well as yarrow, allium, pods of okra, poppies, wisteria and trumpet vine or sweet gum balls, cotton balls, acorns and eucalyptus in variety and assortment of cones. Some osage orange and ornamental gourds are also desirable.

Please bring to the Botanic Gardens House, 909 York St. on October 28th before noon or call for further information.

SOIL RENOVATION AND RESTORATION PROGRAM AT THE CHILDREN'S GARDENS

This fall will mark the beginning of a soil building program for the York St. Children's Garden, the Barrett Garden, and the new Youth Garden.

We will begin the program with the collection of organic materials which will be temporarily stored on the lot north of the York St. Children's Garden. (Enter the alley off 11th Ave. between York and Josephine. Deposit organic material at the North Fence.)

The Denver Botanic Gardens is enlisting volunteer help now for the collection of bagged leaves and grass clippings which can be brought to this area anytime through the month of November. This help will be greatly appreciated. For further information contact Lee Schwade at the Denver Botanic Gardens — 297-2547, Ext. 5.

Be sure to read *The American Horticulturist*, Summer 1976. In it you will find an article on the Colorado columbine by the Director of the Gardens, Dr. William G. Gambill, Jr. It is beautifully illustrated by Loraine Yeatts' picture of flowers from Yankee Boy Basin.

PROTECTION OF WILDFLOWERS

The breath of flowers is far sweeter
in the air than in the hand.

Francis Bacon (1561-1626)
English philosopher

Our wildflowers are appealing,
A joy to one who seeks;
And those attuned to nature
Their silent beauty speaks.

Let no one still their voices in
Some withering bouquet;
As such they have no fragrance
Nor beauty to display.

For those who may not understand
The pleasure that is ours;
We hope they too will find it
Expressed in living flowers.

Carl W. Tempel, M.D.
(Member of the Denver Botanic Gardens)



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To Organizations that use the Facilities of the Denver Botanic Gardens.

Are you planning any special events that are open to the public? If so, remember we are glad to help publicize such events in the Newsletter. Please send copy to 909 York Street by the tenth of the month prior to the event. Mark the envelope "Newsletter".

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BOTANY CLUB

Friday, October 15

7:30 p.m., Classroom C

Since fresh plants are not now available, this meeting starts the season for special slide shows. Dr. Richard B. Schwendinger, who was the bioengineering supervisor for Alyeska Pipeline Service Co., will show pictures taken while he worked in Alaska.

Since the Denver Botanic Gardens is working on details for an Alaskan trip next year this should be of special interest. All welcome.

AND

The Rocky Mountain Bromeliad Society will meet on Monday, October 18th at 7:30 p.m. in Classroom B. Dr. Richard Schwendinger will lead a discussion and demonstration of raising bromeliads from seed. All interested persons are invited to attend.

Additional information can be obtained from Larry Mason, 233-0577.

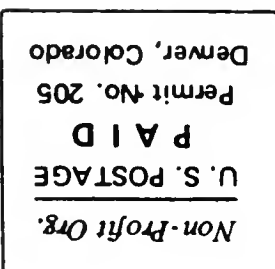
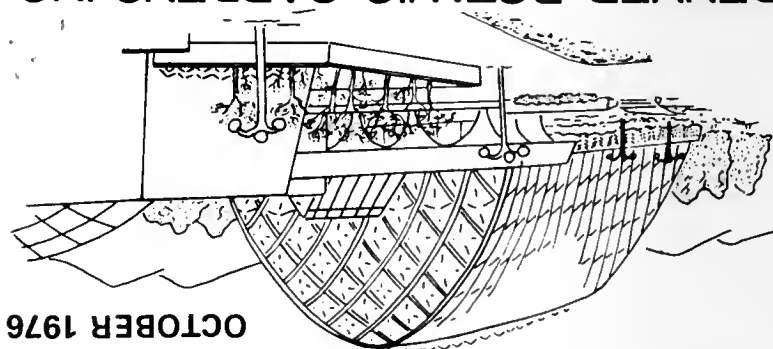
Join us for the free film, "Wonders of the Wilderness," on October 9 at 1:30 p.m. Classroom C. This film was produced by Colorado State University in cooperation with the U.S. Forest Service. It takes viewers on a pack trip with the American Forestry Association trail riders into the Maroon Bells — Snowmass Wilderness area of the White River National Forest. Free.



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DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



LIBRARY ADDS NEW ORCHID BOOKS

The Helen Fowler Library has attempted to acquire volumes on Orchidaceae to meet the needs of the staff, the members of the Denver Orchid Society and the public. The growing orchid collection at DBG needs to be sustained by good sources to identify specimens and to indicate cultural needs.

Besides 55 books on orchid culture, the Library has the following recent accessions on local flora:

Europe:

Hermjakob, Gerd. *Orchids of Greece and Cyprus: 1. the Genus Ophrys*. Kiffissia, Greece, The Goulandris Natural History Museum, 1974.

North America, North of Mexico:

Luer, Carlyle A. *The Native Orchids of the United States and Canada Excluding Florida*. New York, New York Botanical Garden, 1975.

Sheviak, Charles J. *An Introduction to the Ecology of the Illinois Orchidaceae*. Springfield, Illinois State Museum, 1974.

Luer, Carlyle A. *The Native Orchids of Florida*. New York, New York Botanical Garden, 1972.

Bingham, Marjorie Tellefsen. *Orchids of Michigan*. Bloomfield Hills, Mich., Cranbrook Institute of Science, 1939.

Szczawinski, Adam F. *Orchids of British Columbia*. Victoria, B.C., A. Sutton, 1970.

Central America:

Dressler, Robert L. *The Genus Encyclia in Mexico*. Mexico, Asociacion Mexicana de Orquideologia, 1974.

Halcrow, Magnus. *Orchids of Belize*. Belize, British Honduras, Govt. Printer, s. a.

Hamer, Fritz. *Las Orquideas de El Salvador*. San Salvador, Direccion de Publicaciones, Ministerio de Educacion, 1974.

Lapiner, Jean M. de. *Orquideas Michoacanas*. Mexico, s. a.

Williams, Louis Otho. *The Orchidaceae of Mexico*. Tegucigalpa, Honduras, Escuela Agricola Panamericana, 1965.

Wright, N. Pelham. *Orquideas de Mexico*. Mexico, D.F., Fournier, 1958.

South America:

Dunsterville, G. C. K. *Venezuelan Orchids Illustrated*. London, A. Deutsch, 1959.

Hoehne, Frederico Carlos. *Iconografia de Orchidaceas do Brasil; Generos e Principais Especies em texto e em Planchas; Resume e Complemento da Monografia das Orchidaceas na "Flora Brasiliica."* Sao Paulo, Secretaria de Agricultura, 1949.

Schultes, Richard Evans. *Native Orchids of Trinidad and Tobago*. New York, Pergamon Press, 1960.

Schweinfurth, Charles. *Orchids of Peru*. Chicago, Chicago Natural History Museum, 1958-61.

Africa:

Morris, Brain. *The Epiphytic Orchids of Malawi*. Blantyre, Malawi, The Society of Malawi, 1970.

Piers, Frank. *Orchids of East Africa*. Lehre, Cramer, 1968.

Stewart, Joyce. *Orchids of Tropical Africa*. South Brunswick, A. S. Barnes, 1970.

Pacific:

Lin, Tsan-Pias. *Native Orchids of Taiwan*. Taipei, China, Distributed by J. F. Hsiung, 1975.

Su, Horng-Jye. *Native Orchids of Taiwan*. Taipei, Harvest Farm Magazine, 1975.

Atlantic Islands:

Garay, Leslie A. *Orchidaceae*. Arnold Arboretum, Harvard University, 1974.

Recent monographs on orchid studies new to the collection are:

Ebel, Friedrich. *The Strange and the Beautiful World of Orchids*. New York, Van Nostrand Rienhold Co., 1972.

Fowlie, Jack A. *The Genus Lycaste: Its Speciation, Distribution, Literature, and Cultivation - a Monographic Revision*. Pomona, Calif., Azul Quinta Press, 1970.

Simon, Hilda. *The Private Lives of Orchids*. Philadelphia, Lippincott, 1975.

Withner, Carl Leslie. *The Orchids: Scientific Studies*. New York, Wiley, 1974.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.
Editor — Margaret Sikes — 297-2547



Green Thumb Newsletter

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DENVER
BOTANIC
GARDENS, INC.

No. 76-11

NOVEMBER 1976

297-2547

GARDENING TIPS FOR NOVEMBER

NATURE'S PREPACKAGED FLOWERS

Forcing bulbs indoors can not only be fun and provide a colorful and unique display during the cold winter months, but can also be accomplished relatively easy. It is now possible to purchase bulbs already conditioned for forcing along with complete instructions that will bring them into satisfactory bloom. Unfortunately, these are usually restricted to indoor types that are not hardy bulbs. An example is the paper white narcissus. For those that want to be more adventuresome, you may wish to use some of the common outdoor varieties including tulips and many varieties of daffodils. You can follow certain procedures that will eventually give you colorful displays throughout the winter.

Tulips, hyacinths and narcissi bulbs have been referred to as nature's prepackaged flowers. In a sense, this is true in that each bulb contains within it a perfectly-formed flower, providing the bulb is of the proper size, and all the necessary nutrients; requiring only the proper environment and sufficient time for it to explode into bloom.

Most of the bulbs that are purchased for outdoor use need further conditioning, however, before blossoming is possible. In other words, a bulb purchased from the store now, unless it has been pre-conditioned, would not force satisfactorily into a flowering plant. Usually it will simply rot or produce foliage and nothing else. This is because most spring flowering bulbs, with the exception of some narcissi, do not really have all of the flower parts fully developed when they are harvested and sold. To achieve further development, somewhat exacting stages at varied temperatures are required. Commercial growers follow all these different stages in order to achieve the types of potted bulbs you can buy at Christmastime or most any other time during the winter months. We'll try to simplify the procedure for those who wish to undertake forcing outdoor bulbs inside their homes.

Tulips are probably the most challenging because they have to have the most exacting temperature requirements. Basically, all bulbs should be stored until planting time at a temperature around sixty to sixty-five degrees. At planting time the temperatures are gradually reduced over a period of several weeks until they are kept at approximately forty-one degrees. This is close to the temperatures of most lower shelves in a refrigerator. In fact, if you have a spare refrigerator, you might consider it for this purpose. A cold period is needed during which time rooting takes place; six to eight weeks for hyacinths and narcissi, and up to fifteen weeks for tulips.

Following the cold treatment, the flower buds within should be fully matured and are ready for forcing. If planted at various times on a staggered schedule it is possible to then bring them out of storage to come into blossom at any desired time during the winter months. Bringing them out of

(Continued next page)

ANNUAL PRE-HOLIDAY GIFT SALE-NOV. 19 AND 20

Heavenly-scented fragrance gifts, handcrafted yuletide treasures, zesty herb vinegars and herb salt, delightful botanical harvests — these ARE Christmas at Denver Botanic Gardens Gift Shop's annual pre-holiday sale scheduled November 19 and 20 in Boettcher Memorial Center, 1005 York Street. Sponsored by Associates the sale will be held from 10 a.m. to 4:30 p.m. both Friday and Saturday.

Fragrance Gifts. Lemon is the latest scent in potpourri offered in perky sachets, in elegant glass boxes lined with forever flowers, in domed jars or in china containers. Peppermint perfumes tranquility pillows. Other potpourri fragrances are lilac, lily-of-the-valley, sandalwood, lavender, carnation and rose. Rose potpourri is also offered in bulk for personalized packaging.

For those who mix their own potpourri, hard-to-find ingredients include a variety of oils and fixatives such as orris root, patchouli, vetiver, tonka beans as well as oils in musk, ambergris and musk amberette. Fruit or floral scented glycerine soaps and exotic room scents will be available.

Popular, too, at Fragrance Center are vanilla beans, cinnamon sticks, herb salt, plus frankincense and myrrh.

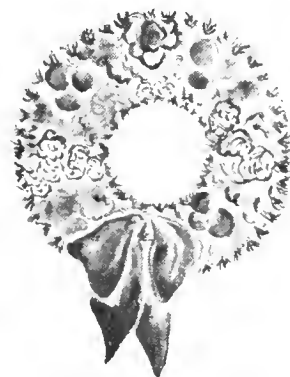
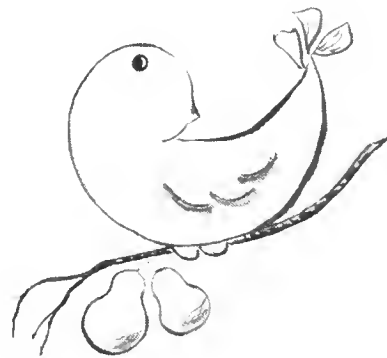
Yuletide Treasures. Partridges perch in decorative sugar scoops or dippers, bath soaps are ribboned and embellished with birds and flowers, cone wreaths big to small have been created in special workshops. Ornamentally, exotic shells dangle within circlets of gold — these graced last year's Christmas tree and will be offered. Here, too, are hand-studded balls of stars-over-Persia.

Herb Vinegars have been brewed from a generations-old recipe by members of the Guild. Last year 1800 bottles of regular and tarragon vinegars were sold to further development of the nationally-known herb garden at Denver Botanic Gardens.

Cones, Pods and Seeds have been gathered for those who wish to make their own holiday arrangements. Bells of Ireland, golden yarrow, stems of teasel and money plant as well as contrived flowers from Osage oranges have been prepared by members of Around the Seasons Club — their annual effort at this event.

Gifts for Children. Whimsical figurines have been fashioned from nuts and seeds. Old-fashioned calico finger puppets, cuddly velour animals (bean bag variety), antique-like dolls with bisque heads and jointed limbs of wood are a few of many suggestions. Little Red Ridinghood displays a

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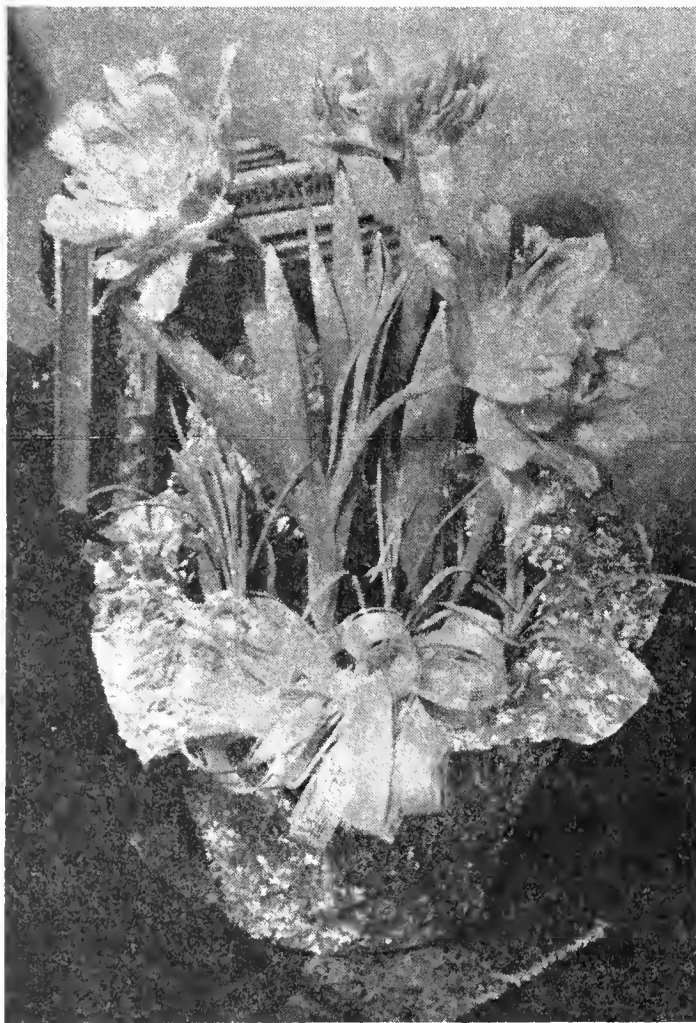
storage requires some temperature control also. Normally the bulbs are removed from storage and placed in a dark, relatively cool location; preferably sixty-five degrees as might be found in many home basements.

Soon thereafter, it will be observed that shoots appear and when they have reached one to one and one-half inches in length, the plants should be brought out into a light room but away from direct sunlight. They will develop rapidly at normal room temperatures, flowering anywhere from four to eight weeks after removal from storage, depending on the type of bulb.

Bulbs should be forced in the containers you intend to grow them because they will not tolerate being moved once rooting has taken place. Most any container is suitable and it is usually preferable to use soil but well-drained material such as gravel or a mixture of gravel and peat can also be used. Some prefer to use a decorative epoxy-coated gravel such as is used in aquariums, selecting a color that will fit the decor of the container and the home as well.

Since the bulbs contain all the nutrients they need, you need not worry about adding any fertilizer. The only concern is to avoid drowning the bulbs by submerging them in too much water. The bulbs should be so placed in the planting medium that they are partly exposed above the surface and the water level should be maintained so that only the base of the bulb is in contact with free water.

After the bulbs have finished blooming, it generally does not pay to try to grow them on and save them. It is then that they need nutrition and when growing in a gravel culture, this can become a difficult chore. If you are growing them in soil rather than in gravel or a mixture, they can be salvaged but again, it would be difficult since light conditions in most homes would not permit adequate food development by the leaves with which to grow new bulbs.



Houseplant Care

The winter months generally bring on some illnesses in houseplants because of reduced light intensity but probably more so due to very low humidity in most homes. The most common complaint is that the lower leaves of the plant begin to dry up, develop brown leaves or they turn yellow

and fall off. While several things can cause this, the most common cause for this condition is continuing to frequently water the plant, as you might have done in the summer, when the plant is now attempting to slow down its own growth rate. This usually results in getting the soil wetter than normal and providing more water than the plant can use. This leads to root rot and corresponding foliage drop.

The secret to successful houseplants during the winter months is gradually reducing the frequency of watering but when you do water, water thoroughly so that it runs completely through the container and any surplus water drained off from the catch basin below. Another method, that will also increase humidity a little bit, is to fill the catch basin with coarse sand, resting the pot on the surface of the sand and the remaining water in the catch basin will not be taken back up into the soil. When this happens, a boggy root system develops along with an accumulation of soluble salts. This is the white stuff you see around the rim of the pot and for that matter, sometimes on the soil surface.

Another important part of keeping houseplants healthy in the winter months is making sure that they are away from drafts such as doors that lead to the outside. Neither should they be placed on window sills that conduct cold. If you happen to have, as I do, aluminum windows and terrazzo window sills, you have the worst combination for growing houseplants. The plants should be moved away from these places, being careful that they do not end up on top of the TV set nor near heating outlets. This is particularly important if you have forced air heat because this type of unit causes sudden changes in the air temperature in the vicinity of the plant; first being very warm then, since most furnaces of this type have fans that continue to run after the heat source has been shut off, cold air begins to circulate.

Household insects may also be a problem. These can include spider mites, mealy bugs and white flies. If you have just recently purchased plants from a greenhouse or garden center or, for that matter your local grocer, beware. Quite often these are sources of new infestations. Just as tropical fish fanciers will routinely treat newly introduced fish for possible disease that might get into the tank, a good houseplant grower will routinely treat houseplants that have been newly introduced for insect problems. Examine them carefully but even close examination may not reveal the tiny eggs of spider mites which will soon hatch in your warm home and before you know it, the damage appears on the foliage. Use only an approved insect control material designed for indoor use. Many of these come in aerosol sprays. Pay close heed that you hold the container from twelve to eighteen inches away from the foliage. The propellants used in the aerosols are at subfreezing temperatures near the nozzle and can do considerable damage to houseplants if held too close to them. Use sprays only in adequately well-ventilated areas and away from food or food serving areas. Even those sprays approved for indoor use can be very toxic so follow carefully all directions appearing on the label.

Happy Gardening and Happy Thanksgiving!

Dr. J. R. Feucht

“Habits and customs differ but all people have the love of flowers in common.” This Chinese proverb seems particularly appropriate for the Lobby Court display this month. The yellow and orange chrysanthemums predominated earlier, but now the shades are those of purple and red. Hard to decide which is lovelier!

DENVER BOTANIC GARDENS

CALENDAR OF EVENTS

NOVEMBER, 1976

NOVEMBER

[illegible]

CALENDAR OF EVENTS FOR NOVEMBER (Continued)

18)*	10:00 a.m.	Botanic Gardens House – Main Room	Around the Seasons Meeting
18)	7:30 p.m.	Education Building – Lecture Room “A”	Colorado Open Space Council
18)	7:30 p.m.	Education Building – Lecture Room “C”	Organic Garden Club Meeting
19)	10:00 a.m.	Education Building – Horticulture Hall	GIFT SHOP CHRISTMAS SALE OPEN TO PUBLIC: 10:00 a.m. – 4:30 p.m.
19)*	7:30 p.m.	Education Building – Lecture Room “B”	Colorado Bonsai Club Meeting
19)	7:30 p.m.	Education Building – Lecture Room “C”	Denver Botany Club Meeting
20)	9:30 a.m.	Education Building – Lecture Room “B”	Hi-Country Judges Workshop
20)	10:00 a.m.	Education Building – Horticulture Hall	GIFT SHOP CHRISTMAS SALE OPEN TO PUBLIC: 10:00 a.m. – 4:30 p.m.

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22)	9:30 a.m.	Botanic Gardens House – Main Room	Ultra Violet Club
22)	7:30 p.m.	Education Building – Lecture Room “B”	Sierra Club (Wilderness Workshop)
23)*	4:00 p.m.	Botanic Gardens House – Conference Room	Board of Trustees Meeting
23)	7:30 p.m.	Education Building – Lecture Room “C”	Gladiolus Society Meeting

“HAPPY THANKSGIVING DAY”

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29)*	7:30 p.m.	Education Building – Lecture Room “A”	Nature Conservancy Meeting
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DECEMBER

1)	7:30 p.m.	Education Building – Lecture Room “A”	Audubon Society Meeting
2)	7:00 p.m.	Education Building – Lecture Room “C”	Colorado Open Space Council
2)*	7:45 p.m.	Education Building – Horticulture Hall	Denver Orchid Society
3)	11:00 a.m.	Botanic Gardens House – Main-Dining-Kitchen	Civic Garden Club
4)	9:00 a.m.	Education Building – Horticulture Hall	Denver Audubon Society Art Exhibit OPEN TO PUBLIC: (December 4th through 12th)
4)	1:00 p.m.	Education Building – Lecture Room “A”	African Violet Club

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**Members or Enrollees Only*



High Altitude Research — A CSU-Pitkin County Project

The Department of Horticulture at Colorado State University, in cooperation with Pitkin County, centered in Aspen, has initiated a long-term study of horticultural plants and their performance at high elevations.

Using a grant by the county, and land donated by Mr. John Stern of Aspen, Colorado, the plans call for the ultimate development of a research and education center located near Snowmass Village.

For the past two summers, researchers have planted experimental plots of ground covers, trees, shrubs, legumes and grasses at numerous locations near Aspen and Snowmass. Included are soil stabilization studies on steep road cuts and shale outcrops. Also included in the research are evaluations of vegetables and fruits that could be utilized for local home gardeners and on a production scale for local consumption.

In cooperation with Aspen Ski Corporation, four experimental sites have been planted at Snowmass Ski Corporation and four experimental sites have been planted at Snowmass Ski Area. These sites are also being fully instrumented to monitor climatic conditions including air and soil temperatures, solar radiation, snow depth, rainfall, and wind velocity.

Experimental plots installed so far, range in elevation from 7,800' to 10,500' and on slopes up to 35 degrees.

Cooperating investigators on the project are: Dr. Jackie D. Butler, Extension Professor, Turfgrass; Dr. James R. Feucht, Extension Professor, Landscape Horticulture; Dr. Frank D. Moore, Associate Professor, Vegetable Crops, and Dr. Bert T. Swanson, Assistant Professor, Landscape Horticulture, Colorado State University.

Botany Club — Nov. 19 — 7:30 Classroom "C"

"Kissin' Cousins of the East" presented by Albert Daraghy. A slide show of flowers of the eastern United States. Free and Open to the Public.

HELP PLEASE!

Don't forget we are having a book sale in May. Your used books would be most welcome. Please call 297-2547, Ext. 24 for more information.

Orchid Show 1976

For those who attended this year's show, a very wide range of genera was on display in the Horticultural Hall and the whole theme *Art in Orchids* was beautifully executed. For those who missed the opportunity I can only suggest that when next year's dates are published you make a note to attend. The Gardens participated with a table display that was awarded first prize for special exhibit and one of the staff, Larry Latta, was recipient of a best orchid in the show award with his *Stanhopea oculata*.

Garden and display participation by the D.B.G. helps all concerned even if it's on a non-competitive basis. Unfortunately, even though we have fairly extensive collections back in the greenhouses, we lack areas for public viewing and such shows as the Denver Orchid Society's give us the opportunity to show off some of our plants.

SPECIAL GIFT

Our thanks to Norman Cohn for his handsome donation of forty orchids to our collection. These were grown in his fifteenth floor greenhouse and include several clones awarded by the American Orchid Society and the Royal Horticultural Society. Visitors will be able to admire some of these plants in the orchid case or on the pedestals in the Lobby or on display in the Conservatory. Not only plants were included, for the Library also received lovely photographs and a very special book, *The Complete Edition of Orchids of Australia* by W. H. Nicholls. This is number 24 of 150 copies and may be viewed in the Waring Rare Book Room.

INVENTORY REPORT

Mr. Pierce reports that the two new greenhouses contain 1700 species, varieties and cultivars. This count includes major groupings of palms, insectivorous plants, ferns, cacti and other succulents. The approximately 340 orchids are not included in this inventory nor are the 620 species, varieties and cultivars in the Conservatory.

NEW BOARD MEMBER

Mr. John C. Mitchell, President of the Board of Trustees, has announced the election of William J. Lunsford to the Board.

Donations have been gratefully received in memory of:

Helen C. Bosworth
Marmaduke B. Holt, Jr.
Cora B. Mayo

FREE FILM

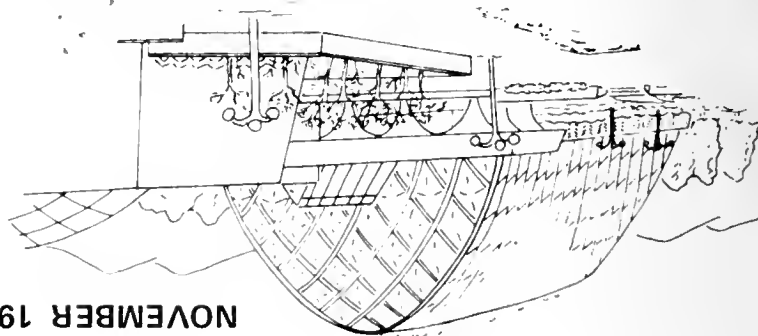
"Think Like a Mountain" is a new Forest Service film dealing with rare and endangered species of wildlife. This is scheduled to be shown on November 13th at 1:30 PM in Classroom C.

DID YOU KNOW?

The U.S. Postal Service charges 25¢ for every Newsletter that isn't delivered to a subscriber and 53¢ for every *Green Thumb* magazine that is returned.

Won't you help us get our publications to you without delay and without extra charge to the Gardens? Please be sure to let us know in advance of a change of address. Thank you.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



NOVEMBER 1976

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Denver, Colorado

CHRISTMAS SALE (Continued)

triple personality: simply by folding her felt skirt she becomes Grandma, another fold and she's the mean old wolf. Perennially popular is the complete line of Beatrix Potter books, puzzles and figurines.

Books to Cherish. More than 600 titles represent the newest or best volumes on gardening, ecology, wild flower identification. They range in scope from coloring books to college texts. Publications of Denver Botanic Gardens include *What Tree Is This?*, a simple key for tree identification, and *Meet the Natives*, an amateur's guide to wild flowers. *Wild Flower Name Tales*, Anderson; *Rocky Mountain Dye Plants*, Bliss; and the new edition of *Rocky Mountain Flora*, Weber; Kelly's latest works are *A Way to Beauty* and *Trees for the Rocky Mountains*. Herbs are considered in 50 different titles including the classic *Herbal* by Joseph Wood Krutch, offered in paperback at \$10.

Gourmet Pleasers. Herb plants growing in pots or planters will be available once more as well as ever-popular herb salt, prepared by Tussie Mussie Mesdames. Birds decorate French dessert plates; violets or roses are featured on Spode cups and saucers. Placemats and linen towels in flower or bird motif and tile trivets have been chosen for sale. In wood are spoon racks, coffee grinders, salt and pepper mills, mixing spoon trees and spatulas. Butter molds and large deep molds will be offered in pottery, and of course, casseroles in ceramics.

Jewelry includes neckpieces, bracelets and earrings created by volunteers from unusual seeds, beads and clay medallions. Juniper berry necklaces are made by Navajos living near Bluff, Utah and other necklaces of semi-precious stones have been made in Brazil.

Gifts from Near and Far. Metallic aspen leaves and branches, some adorn fine wood; Laser-engraved walnut desk accessories with nature designs; Norwegian crystal in paper weights, ash trays and vases; Kashmir boxes lacquered in vivid floral and animal motifs; goldtone powder room accessories (comb and brush sets, jewel boxes, wastebaskets);

carved stone figurines from Russia; copperwashed tinware; olive wood creches from Israel and Hummel figurines by Goebel; pristine madonnas in ceramics, simistone, glass or pottery.

Nostalgia Teasers. Music boxes, wind chimes, mobiles, thimbles and many collector's items.

Certificates from the Gift Shop and, of course, memberships in Denver Botanic Gardens are always welcome gifts.

Gifts, whether handmade or selected, all have a hint of nature. Naturally, all proceeds benefit Denver Botanic Gardens.

GARDENS TO HOST WILDLIFE ART SHOW

Original works and prints of locally prominent and nationally renowned artists will be featured at the Wildlife Art Exhibit and Sale to be held December 4th through 12th at the Denver Botanic Gardens, Horticulture Hall. The event is sponsored by the Denver Audubon Society, and proceeds from the sale will benefit such Audubon projects as the study of habitat along Cherry Creek drainage, field studies of migrating and nesting birds at Barr Lake State Park, and the building of a public observation blind at Barr Lake.

For further information regarding the Wildlife Art Exhibit and Sale, call the Denver Audubon Society, 893-5883.

Gladiolus Slides Needed

Did anyone take colored slides of the gladiolus garden this summer? If so, and you'd care to share, we would appreciate hearing from you.

ROCK WANTED —

Does anyone have a floating pumice rock? The turtles in our conservatory would really appreciate such a donation. Thank you.



Green Thumb Newsletter is published monthly by Denver Botanic Gardens, Inc., 909 York Street, Denver, Colorado 80206. The Newsletter is included as a benefit of membership in the Denver Botanic Gardens, regular membership dues being \$10.00 a year. Items for publication are welcome. The deadline for copy to the editor is 2:00 p.m. on the 10th of each month preceding publication.
Editor — Margaret Sikes — 297-2547



GARDENING TIPS FOR DECEMBER

Protect Against Winter Burn

December always seems to be a difficult month to talk about gardening but there is one little chore that may need to be done, depending on the weather conditions, and that is to deep water your trees and shrubs, particularly if the month turns out to be dry as it has been in the past two Decembers. Even though the surface of the soil may be moistened by occasional snows, it is important to put the water down deeply because moisture where the roots are may be completely depleted. The best way to do this is to use a hose-attached soil needle such as the Ross Root Feeder. It is not necessary to leave it in the ground for long periods of time but it should be moved short distances leaving it in each spot perhaps no more than one-half minute. In this way you will distribute the water more evenly but not tend to overwater the plant.

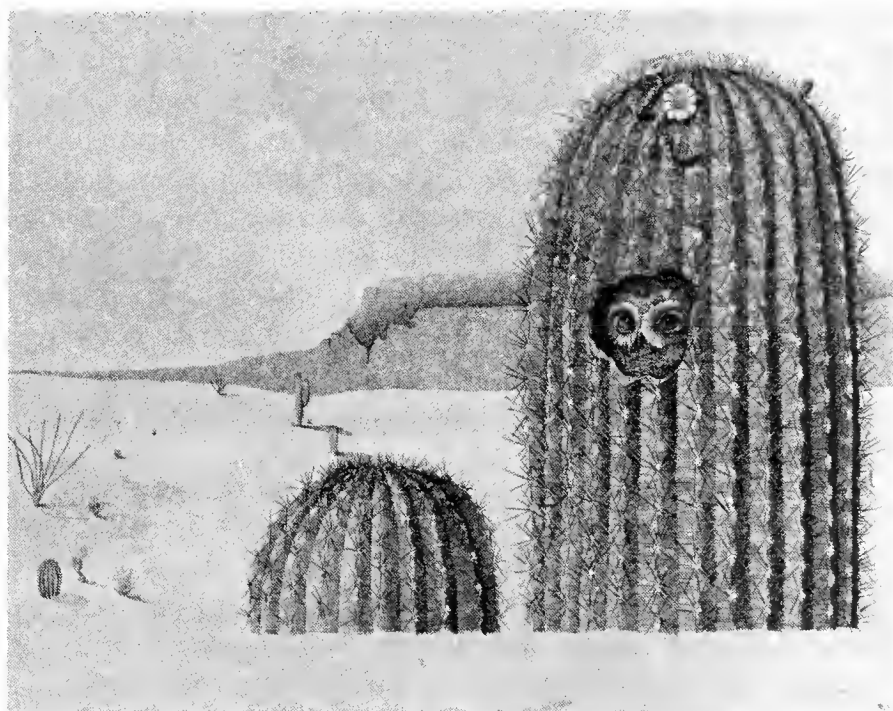
Some garden centers are advertising the use of anti-desiccants to reduce winter drying in evergreens. Materials such as "Wiltpruf" and "Vapoguard" are frequently used in the nursery trade to reduce water loss during transplanting. Unfortunately, these materials are not as successful in the arid climate of Colorado as they are in the eastern and mid-western states. There is also a danger in the use of some of these when applied during cold weather because they may last too long, forming a film on the leaf surface and blocking the breathing pores (stomates) and not only cutting down water loss but reducing respiration and photosynthetic activity as well. This can lead to injury to the plant caused by the suffocation not only of the tops, but can reduce food transport to the roots resulting in starvation. If you have evergreens that tend to wind burn during the winter months, it is probably better to protect them with loose wraps of burlap or by erecting some kind of wind barrier, than it is to use the chemical anti-desiccants.

If you have tried late fall transplanting and just recently moved some trees and shrubs, it is highly recommended that you mulch the surface of the ground in order to prevent a deep freezing of the soil. This will give the roots a chance to establish. Otherwise, the plant may dry out because it does not have sufficient roots to compete with water loss. Here again, the chemical desiccants may be helpful if used properly but erecting a physical wind barrier will usually serve more effectively.

Cut vs. Live Christmas Trees

Each year this column has discussed the virtues of buying a cut Christmas tree as opposed to the purchase of a live tree. Live Christmas trees have seemed to become quite popular in this "ecological age" but the reader should be reminded that planting a live tree following the Christmas season is often a very difficult task and may result in not saving a tree, but rather wasting a natural resource. A lot depends on the weather conditions and how much

(Continued next page)



"Elf Owl" – Peter Parnall

© Greenwich Workshop

AUDUBON SHOW

A Wildlife Art Exhibit and Sale, sponsored by the Denver Audubon Society, will be held in Horticulture Hall from December 4th through the 12th.

The show, open to the public during Garden hours (9 to 4:45 daily), will feature original paintings by Donald L. Malick, one of the leading bird artists today. Mr. Malick has painted several dioramas at the Denver Museum of Natural History. Other artists include Don Eckelberry, Bruce Dines, Eldridge Hardy, and Tucker Smith. The prints feature something for every wildlife interest: duck hunters will enjoy the faultless detail of the "Green-winged Teal" by Jo Polseno; zoo lovers will be attracted by John Schoenherr's large mammals; Peter Parnall's prints captivate the whimsical nature of wildlife; and the traditional wildlife enthusiast will enjoy the antique prints of John James Audubon.

For further information regarding the Wildlife Art Exhibit and Sale, call the Denver Audubon Society, 893-5883.

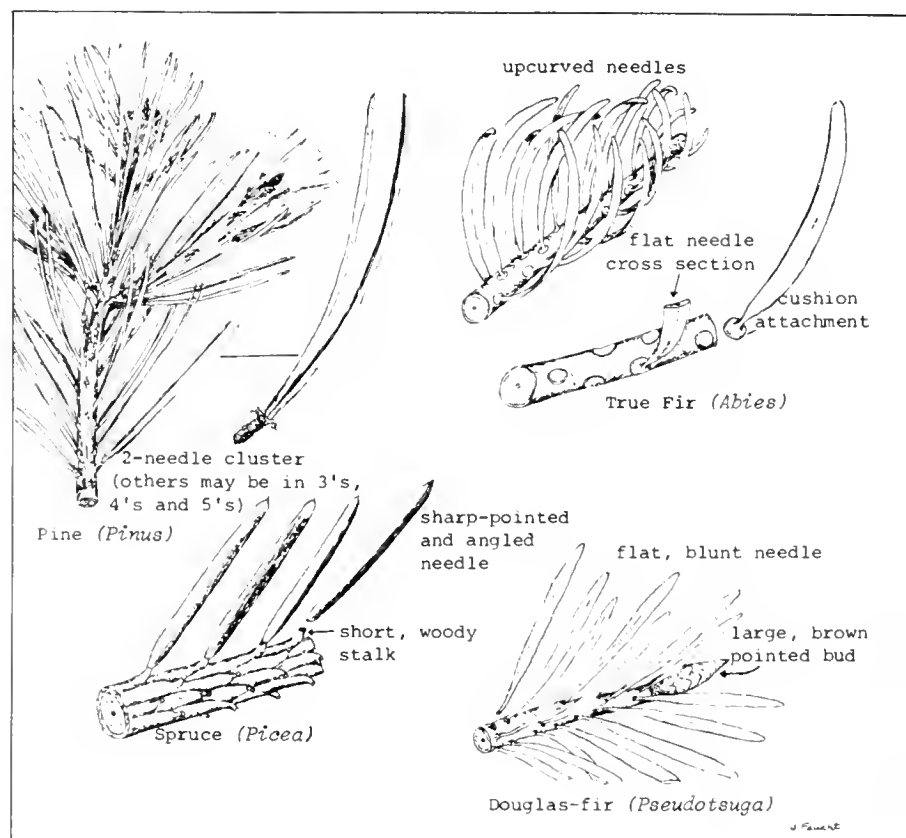
The Helen Fowler Library, Denver Botanic Gardens, is now part of the Central Colorado Library System and as such, will enjoy the services of the courier. Books borrowed from the Helen Fowler Library may be returned to any of the participating libraries, e.g. all the public libraries in the Denver metropolitan area. Books from these libraries may be returned to the Helen Fowler Library where the courier will pick them up and route them to their proper home.

"New Books for Old" is a motto of the Library, if you'll help! We sell second hand books at the Sale in May and then use the money to buy new books for the collection. Therefore, we need lots of donations. Please call 297-2547 ext. 24 for more information.

preparation you do prior to the purchase of the tree. If you are contemplating using a live tree, prepare the soil now; digging the planting hole in a permanent location. Place the soil removed in an area where it will not be frozen. Be sure to cover the hole so that someone cannot accidentally fall into it.

A live tree should not be left in the home for more than about three days, otherwise it may start to break dormancy and will not be able to cope with the sudden change to cold temperatures when taken outside again. If the weather is bad following Christmas, take the tree to a cold location such as your garage, making sure to keep the soil slightly moist until there is a clear day to plant it outside. In the process of planting, it is a good idea to thoroughly mix in some coarse peat moss to improve aeration and drainage and following planting, you should cover the surface with a deep mulch such as wood chips or similar materials that will insulate the soil from a hard frost. Avoid overwatering the plant, keeping in mind that in the winter months soils do not dry out rapidly once they have become moistened because of the lower temperatures.

For those purchasing a cut tree, you will get much more satisfaction if you select from Christmas tree lots that have the fresh cut and if possible, native species. Many of the imported trees are cut as much as two months ahead of schedule and may be fairly dry. One way to check them is to stand them up and tap them firmly on the ground and watch for needle drop. Be wary also of those trees that have been sprayed with colorant because this often masks the off-green color of trees that are getting too dry. Dry trees are not only a mess in the home but a decided fire hazard. As to tree types, the best are the Scotch Pine, Douglas-fir and true fir. Most spruce dry quickly and thus drop needles readily. The Douglas-fir and true fir will have a soft feel to the needles. Spruce will have sharp needles which are square in cross section. Douglas-fir and true fir have flat needles.



After you have purchased a cut tree it is best to saw off a portion of the base (six inches is enough) to expose a fresh cut and then plunge the base in a bucket of water until it is time to bring it indoors. This will help the tree to maintain freshness, providing you keep the tree in a shaded and cool location. An unheated garage or the north side of the building would be suitable. It is also a good idea to use a Christmas tree stand that has a container for holding water.

Houseplant Care

This column has already mentioned the ills that houseplants incur during the winter months, mostly as the result of lower humidity when the furnace is turned on. It is a good idea to keep your house plants on the dry side in order to keep them slowed down in growth. This will reduce the demands of the plant and it will be better able to cope with lower humidity and lower light conditions. Poinsettias are a popular plant this time of year and they too, should be kept pretty much on the dry side. Poinsettias are also very sensitive to cold drafts of air or even sudden changes in warm temperatures. It is best to keep them away from direct sunlight and from heat outlets as well as from the doorways.

I hope you've all had a pleasant gardening year and Merry Christmas!

Dr. J. R. Feucht

WINTER LIST OF CLASSES

By now all members should have received the *Winter List of Classes*. It is hoped that everyone will find something of interest to himself and will be free to participate at the time as listed.

Diane Lewis of the Canaan Center for Creativity will teach several more classes for children than were offered before. In fact her classes in September were such a success that children asked if they couldn't come back the next Saturday! *Art Workshops for Children* on December 4 will help the students create flowers from play dough and natural materials — pine cones, dried plant materials and bits of wood. The hours are 9-10 a.m. or 1:30-2:30 p.m. for grades 1 to 3 and for the older grades, 10:15-12:15 or 2:45-4:45 p.m. Limit 10 each session. Fee \$1.25

Last year the *Applewood Seed Company Tour* filled up promptly so do not delay in placing your name on the list. December 9 is the date. Meet the group at 909 York at 1:30 p.m. or if you prefer, at 2 p.m. at 833 Parfet. (Turn north off 6th Avenue at Simms; go one block to 8th and turn east to Parfet. There is a large complex on the northwest corner — follow the Applewood Seed Company sign to the west side of the building.) Limit 10. Free.

Guiding is Fun will be an excellent preview for the next guide class, *Tropical Plants of the Conservatory*, which will start in January. Come at 9:30 or 10:30 a.m. on December 6th or 8th and join a regularly scheduled tour of the Conservatory. This is your chance to see what a guide does. Limit 4 each time. Free.

A gift from Clifford Schaffer will really be a great help to the guides. They had wanted a tape recorder for their classes and tours and Cliff provided one. Thanks to him Santa came a little early this year!



Several classes starting in January will be of interest also.

“Did you know that in the early exploratory years of the garden revolution in England, hermitages were established in some estate gardens. These were caves or squalid huts wherein resided hermits hired specifically to serve as wild or poetic fixtures. They were commonly instructed to let hair, fingernails, and beards grow, to wear robes, and in general to appear romantically uncouth. Since such persons were hard to keep employed pay and benefits were liberal. Even so, few flesh-and-blood hermits measured up to the rigors of the job. They were eventually replaced by stuffed hermits, and so, perhaps, began a new tradition of lawn ornamentation, that has given us pink flamingos, reflection globes, wishing wells, and a multitude of cheerful dwarves.” (From *A History of Garden Design* by Derek Clifford. Reprinted by permission of Praeger Publishers, Inc.)

It is doubtful that Mr. Rollinger and Mr. Watson will recommend such attractions in their *Landscape Horticulture* class but they will teach about design principles and plant materials. The class is from January 6-February 24, 7:15-9:45 p.m. in Classroom C. The cost is \$15.00.

In *Indoor Light Gardening* taught by two members of the staff of the Denver Botanic Gardens, many areas will be covered including Light Basics and Equipment; also two sessions will focus on General Plants, flowering and foliage and Specific Plants like orchids, gesneriads, and bromeliads. The class will be taught on Wednesday nights from January 12 to February 9 from 7-8 p.m., Classroom A. The fee is \$7.50.

SPECIAL FLASH

Word has just been received that Avalonne Kosanke will teach a *Dried Arrangement Class* in February! More information in the next Newsletter.

CHRISTMAS SALE

Again thanks are due all the volunteers who planned, set up, staffed and dismantled the Christmas Sale. It was a huge success for it is getting to be a Denver tradition to shop at the Gift Shop for unusual, intriguing items from all around the world.

Thanks too to Avalonne Kosanke, Fran Morrison and their helpers for the smashing Christmas display in the Lobby Court which complements the poinsettias most effectively. How do you think of something different every year!

If you can't decorate your home in quite that style maybe you'd like to be more traditional with holly, ivy and mistletoe.

Holly symbolizes the spirit of Christmas and is celebrated by many carols for its glossy green leaves and red berries. It also is valued as a charm against witches and their evil machinations. Ivy is used to symbolize confiding love and friendship, no doubt because of its clinging habit. Mistletoe is more often associated with the Druids rather than the Christian celebration. In fact the Church never sanctioned it but popular usage did. It is not a beautiful plant but because of its peculiar qualities many myths have been told concerning it.

Holly generally doesn't grow well in Denver but three examples may be seen at the Denver Botanic Gardens: *Ilex meservae* is planted near the garage at 909 York; *I. cassine* is in the Conservatory and the true holly *I. Aquifolium* is planted in the greenhouse. Ivy of course is widely planted and the holiday mistletoe may be found in many shops and stores.



AND MORE ABOUT IVY!

An enormous mess! That's how *Hedera* nomenclature has been described to readers and home gardeners in recent years. Once people discover there are five species of Ivy, and that the same plant (cultivar) is called by half a dozen different names at six different garden centers — or named simply “English Ivy” at all of them — they give up!

Small wonder. To correct this confusion, the American Ivy Society (AIS) was charged with the National Registration Authority for the genus *Hedera*. At its next meeting, the Nomenclature Committee of the International Society of Horticultural Science will consider charging the AIS with International Authority.

The AIS has its headquarters at the National Center for American Horticulture, Mt. Vernon, VA (22121). At the AIS Research Center in La Plata, MD (20646), horticulturist Henri K. E. Schaepman (current President of the AIS) has been conducting experiments and researching all published materials on Ivy, in an effort to determine the correct names of the hundreds of cultivars of *Hedera*. The Research Center has more than 200 distinct cultivars under study.

“It will be our responsibility,” says Schaepman, who received degrees from the Horticultural College of Fredriksoord, The Netherlands, “to maintain the Register accurately, and to register all new cultivars.”

The Ivy Society, which puts out a quarterly Bulletin for its international membership, recently published a “Preliminary Checklist of Cultivated *Hedera*, Juvenile Varieties.” It contains more than 400 entries, with their names and synonyms (sometimes as many as six), descriptions, sources and characteristics. This unprecedented Ivy Checklist is available for \$5, to cover printing and mailing costs.

“It is a ‘Preliminary’ listing,” emphasizes Schaepman, “because we are relying on the input and cooperation of experts and tradesmen to enable us to produce the final version. We're anxious to reach and hear from as many people as we can — through AIS membership or use of our facilities, by both amateurs and professionals.”

The AIS invites people who deal with Ivy to avail themselves of this opportunity to inform their clients of the correct names and care of their Ivies, to contact the Society with questions or identification problems (We'll try to identify the cultivars from cuttings — 10 leaves minimum”), or to submit for registration new or unnamed *Hedera* cultivars.

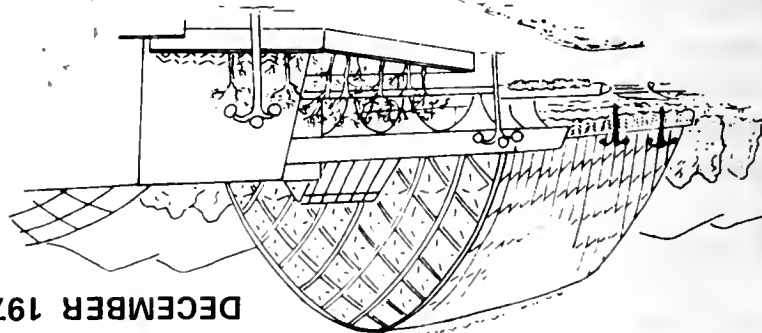
Correction

If you wish to go on a centennial tree walk as mentioned in the last *Green Thumb* magazine the sugar maple will be found in the 2300 block of Colorado Boulevard. Also Al Rollinger knows that *Fagus* is “beech” not “birch” as printed.

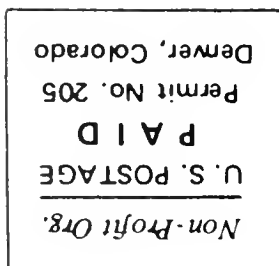
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A donation to the Kathryn Kalmbach Herbarium has been received in memory of Mrs. William P. Mellen. Other donations have been received in memory of Mrs. Gilbert Davis and Mrs. Grace Ramsay. Thank you very much.

DENVER BOTANIC GARDENS INC.
909 YORK STREET • DENVER, COLORADO 80206



DECEMBER 1976



4-HER'S ATTEND HORTICULTURE CONVENTION IN PENNSYLVANIA

by *LecClier Smith*

Eight Colorado 4-H members recently attended the National Junior Horticulture Association's Convention in King of Prussia, Pennsylvania. The eight all won the right to attend the Convention representing Colorado by participating in the State Contest in September at the Botanic Gardens. Members competed in both the 4-H and Honors Division. The contest is similar for both divisions, with eight classes of judging fruits, vegetables, ornamentals, and flowers, an 80-question objective test, and identification of 100 specimens (160 for the Honors contest). Members of the 4-H team were Keith Williamson (Logan County), Eric Umbreit (Jefferson County), LecClier Smith (Arapahoe County), and John Peasley (Alamosa County). Colorado Horticulture Research, Inc. sponsored the trip for the members of the 4-H team. Competing in Honors were Steve Hadden, Robert Zemanek, William Zemanek, and Julie Schmeekle, all Logan County. At the National contest the 4-H team placed seventh out of 17 teams, while the Honors group did very well with Steve Hadden placing fifth and Robert Zemanek placing fourth individually. Robert Zemanek also gave an illustrated talk on Landscaping at the National Contest.

In addition to participation in the National Contest, the trip to Pennsylvania gave us the opportunity to learn a lot about horticulture. Workshops were held on such various topics as horticultural careers, hanging gardens, and plant propagation. We also toured some local Pennsylvania specialty greenhouses growing roses and mushrooms. The highlight of the tours definitely was a visit to Longwood Gardens with its beautiful grounds and fascinating indoor conservatories. We also had some time to see the historic sites of Philadelphia.

Having returned from this year's convention with great enthusiasm, we are already planning for more activities of the Colorado Junior Horticulture Association and on attending next year's convention in Winston-Salem, North Carolina.

HERB GARDEN PLANNED FOR NATIONAL ARBORETUM

It was recently announced that the Herb Society of America will build a \$250,000 herb garden at the National Arboretum in Washington as a bicentennial gift to the American people.

The garden will contain a formal "knot" garden with plants arranged in intricate patterns resembling various kinds of knots. Also planned are specialty sections containing herbs used for medicines, flavoring oils, dyes, teas, herbs used by Indians and early colonial settlers and herbs that attract bees. Species roses — the old fashioned nonhybrid types — will also be featured in a special section.

The actual herb plantings are expected to occupy less than one acre, including walkways and terraces, and a background of various shrubs and trees. The garden's size and layout will permit it to accommodate fairly large groups for visits and study. The Arboretum, which is part of the Department, will expand its educational programs to include herb culture and uses.

The Society had wanted to build the herb garden for a number of years, but it was not possible until recently when legislation was passed permitting USDA to accept gifts on behalf of the Arboretum, and making the gifts fully tax deductible.

Detailed plans for the herb garden are being prepared, including a specific sequence of construction stages and timetable for completion of each stage. The first stages of the garden are expected to be ready for viewing in mid-summer of 1977, the year the Arboretum celebrates the 50th anniversary of its founding.

The free film on December 11 in Classroom C at 1:30 p.m. is entitled "Gardens of San Simeon." Spectacular photography highlights the beauty of these gardens south of San Francisco. All welcome.



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